

## **RESEARCH REPORT No.6**

### **Venture Investing and Prudence**

Venture Economics Canada Limited, 1987



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Ontario

**Task Force on the Investment of Public Sector Pension Funds**



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**VENTURE INVESTING AND PRUDENCE  
RESEARCH REPORT #6**

**Prepared by:**

**Venture Economics Canada Limited  
July, 1987**

**Ontario Task Force on the Investment of  
Public Sector Pension Funds**



RESEARCH REPORT #6

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# VENTURE AND PRUDENCE

## REPORT TO THE TASK FORCE ON THE INVESTMENT OF PUBLIC SECTOR PENSION FUNDS

*It is important that we ensure that the investment of public sector pension plans best serve pension beneficiaries, meet the circumstances of today's financial environment and advance the province's economic development.*

*David Peterson  
Premier of Ontario  
September 25, 1986*

### INTRODUCTION

A few years ago, policy statements on pension funds would have ended after expressing the need to serve the plans' beneficiaries. Today, pension fund assets are the largest source of capital in our economy. As such, the policies guiding the investment of these funds can have a significant impact on the financial markets, which in turn control access to capital and therefore directly influence new economic activity. It is therefore appropriate for the Premier of Ontario to link pension funds, financial markets and our economic development together in one sentence. Today they are clearly interrelated.

The Task Force has been mandated to examine these interrelationships in the context of the investment policies for Ontario's public sector pension funds, which collectively now have an asset base of more than \$30 billion. One does not have to go far in pursuing this mandate before entering muddled waters. The broad parameters of any changes in investment policy will be influenced by the nature of the "pension deal", which effectively allocates responsibility for benefit liabilities, which in turn, influences acceptable risk/reward characteristics. The risk/reward relationship embodied in the investment policy will determine the types of investments deemed acceptable, which will influence the access to capital, and ultimately the nature and degree of new economic activity.

The relationships are obviously complex. This report is intended to assist the Task Force in examining the extent to which the investment policies of Ontario's public sector pension funds *can and should* be developed to explicitly stimulate further growth in Ontario's economy.

Given the sheer magnitude of the assets, any investment policy will have an economic impact. But while public and private sector pension funds have assumed a much greater prominence in the financial markets over the past ten years, innovative small and medium sized enterprises (SMEs) have also assumed prominence in the creation of new wealth and new jobs in every industrialized country in the world.

This project has therefore concentrated on the relationships between Ontario's public sector pension funds and the SME sector, or on what we call *venture investing*. (The Task Force has addressed the broader considerations of economic enhancement through its own work and through other consulting projects.) The research and analysis embodied in this report were driven by the following objectives:

- to examine the role that innovative SMEs play in creating new economic activity;
- to determine the extent to which Ontario's public sector pension funds are making capital available to high growth SMEs, directly or indirectly, and to put this into the context of the investments of other pension funds and other types of investors;
- to analyse the factors influencing pension funds' decision to participate in venture investments;
- to examine the relationship between venture investments and portfolio performance (rates of return); and
- to determine the most appropriate policy for Ontario's public sector pension funds with respect to venture investing.

The report also addresses a number of commonly held perceptions, which in many cases, are not based in fact. Pension funds often perceive venture investments to be social rather than economic in nature. Some venture capitalists argue that there is already too much capital in the system, with insufficient opportunities to deploy the capital. Politicians (and the public) often believe that pension funds are not participants in the venture capital market. In all cases, the analysis provides evidence to the contrary.

To address these and related issues, the task Force posed several key questions at the outset.

1. How much capital has been committed by Ontario's public sector pension funds, other pension funds, and other sources for venture investing?
2. How much of this capital has been and is now being invested in SMEs in Ontario and in Canada?

3. Do the venture investment trends of public sector pension funds differ from those of other investors?

4. Are some segments of the SME sector being served more fully than others and are there investment opportunities inherent in these gaps?

The structure of the venture capital industry is such that supply-related questions and demand-related questions need to be treated separately. Most venture investments by pension funds are now made indirectly through professional venture capital fund managers. Pension funds and other investors commit a lump sum of capital to these managers to be invested and eventually, divested, over a period of time. The venture investment process therefore has three distinct phases: (1) committing the capital (thereby creating the stock or the supply); (2) deploying the capital (which is influenced by demand and determines the flow); and (3) realizing the gains. Since the process extends over a period of several years, each component needs to be examined separately.

The results of the project are organized into five main sections for presentation in this report.

1. the definition of venture investing, the relationship between venture investments and economic growth, and the rationale for venture investing by public (and private) sector pension funds;
2. the stock of capital committed for venture investing, the sources of the capital, and the factors influencing these commitments;
3. the flow or deployment of venture capital to SMEs and the factors which influence this flow;
4. the performance of venture investments; and
5. conclusions and recommendations.

In the end, we conclude that pension funds have a responsibility, first and foremost, to their beneficiaries *and* that a professionally developed and managed portfolio of venture investments can contribute to their efforts to serve this responsibility. Pension funds therefore have the opportunity to contribute directly to new economic growth without abdicating their fiduciary responsibilities.



## *1. VENTURE INVESTMENTS, GROWTH AND PENSION FUNDS*

Since no investment is totally risk free, one could argue that any investment is venturesome. However, there are varying degrees of risk associated with different types of investments. Perhaps the easiest way to deal with the risk issue is to divide investments into two categories ... traditional, and non-traditional investments.

Traditional investments comprise the bulk of the institutional portfolios, as they should. They consist primarily of debt and equity securities which can be readily traded in the public markets. The availability of reliable and timely information, the liquidity of the investments and the relatively low transaction costs associated with buying or selling a given security together allow pension funds to manage large pools of capital through traditional investments.

Non-traditional investments, which include oil and gas ventures, real estate investments, private placements, and venture investments, generally involve equity investments which are less liquid than publicly traded securities. The information needs to make these investments are greater, in that considerable due diligence is required and there is no public market which assigns a value to the investment at any point in time. The lack of a public market makes the transaction costs higher as well. The investment is a unique "deal" amongst the investors, with all the attendant legal documentation.

Because of these characteristics, non-traditional investments carry a higher cost and more risk than traditional investments, which increases the returns required from them to justify making the investment in the first place. But since the early 1980s, some of the large pension funds, including a few of Ontario's large public sector funds, have recognized the contribution that oil and gas, real estate and private placement investments can make to the performance of their portfolio, and to their diversification strategies. Unquestionably, there has been a learning curve while trustees and managers have become comfortable with these investments and there are considerable differences in the extent to which different pension funds and investment managers participate in these non-traditional investments. But these differences are more a function of the size and management philosophies of individual pension funds rather than of their public or private sector affiliation.

In many respects, venture investing is the "new kid on the block". Most pension funds have not yet developed the understanding and knowledge necessary to be comfortable making these investments. Many institutional investors immediately associate descriptives like "highly speculative", "very early stage", and "high technology" with the notion of venture investments. In fact, these investments cover a much broader spectrum, even within the context of conventional venture capital.

### *1. What is a Venture Investment?*

A venture investment is defined to be an investment that satisfies the following four criteria:

(i) An investment in a small or medium sized enterprise is a venture investment with an SME defined to be a company with assets of \$35 million or less. While the cutoff is admittedly somewhat arbitrary, the new federal government regulations pertaining to pension fund investments in small and medium businesses, (which are discussed in more detail later in this report) incorporate this asset test. Investments made in larger companies can be classified as more conventional private placements and they are therefore excluded from the analysis.

(ii) A venture investment involves an equity component. At least part of the capital is invested through common or preferred (straight or convertible) shares or junior convertible debt. By using these financial instruments, the investor assumes a higher degree of risk, since equity investors rank behind conventional lenders in recovering their capital in the event of financial difficulties.

(iii) The investment is expected to be long term, with a view to realizing a capital gain on disposition. While interest and/or dividends might be paid along the way, these are not expected to be the main form of return.

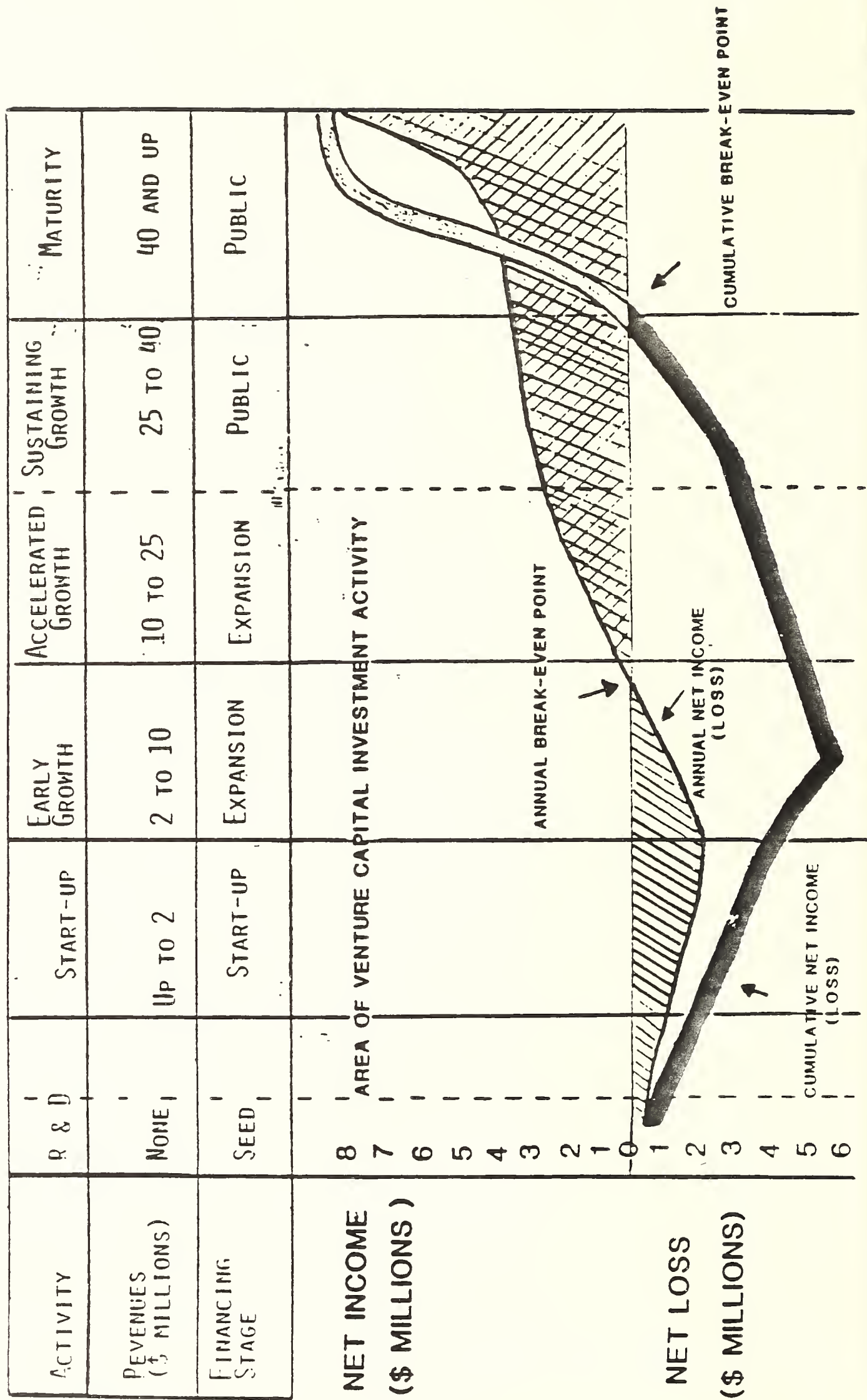
(iv) A venture investment is an active investment, in that the investor is actively involved in the company, normally through representation on the Board of Directors and through regular contact with the firm's management. This differs from traditional investments, in which investors are normally relatively passive.

It is often assumed that venture capital is invested only in companies at the very early stages of the corporate development cycle. In fact, venture capital is invested across the full spectrum of the cycle (as illustrated by figure 1), from the seed or startup stage right through to established, mature companies. Similarly, venture capital is not confined to "high tech" companies, but encompasses the full range of industries.

The universe of investments that qualify as venture investments is therefore much broader than is often perceived. It is the concentration on the SME sector, the illiquid nature of the investments, the active role the investor plays, and the long term perspective that place these investments in unfamiliar territory for pension fund trustees and managers and their professional outside managers.

FIGURE 1

LIFE CYCLE OF A NEW ENTERPRISE





Although venture investing, in an informal fashion, is as old as our society itself (Christopher Columbus and the Hudson's Bay Company were both venture backed), it has only come to the fore as a more formal investment activity in recent years. The first Canadian venture capital company (Charterhouse Canada) was founded in 1952, but there were few players involved until the early 1980s. Many institutional investors do not have the asset base (and the attendant human resources) to allow them to move into non-traditional investments in a judicious manner. But even several large public and private sector funds (\$750 million plus) have not yet had sufficient exposure to venture investing to give them the understanding and comfort required to become active investors.

And yet, these investments can play an extremely important role in generating new growth in our economy, while at the same time delivering a superior rate of return to the investors. It is the unique potential of these small and medium enterprises to create new wealth that makes them of interest to the Task Force, and for this reason, they have been the focus of our work.

## *2. SMEs and Economic Growth*

Venture investors concentrate on firms in the SME sector because of their ability to achieve above average growth (and hence returns). Successful SMEs have demonstrated their potential to make a disproportionately large contribution to new job creation, to the development of new products and processes, and to economic growth relative to their larger corporate counterparts.

### **Jobs**

*SMEs have demonstrated their prominence as the generators of new jobs.* Research done by the Canadian Federation of Independent Business shows that 100% of net new jobs created in Canada between 1975 and 1982 came from the SME sector.<sup>1</sup> More than 30% of all new jobs created during this period came from firms that were less than five years old, although these firms accounted for only 13% of total employment. The Ontario Ministry of Industry, Trade and Technology recently published research that shows that 96% of net new jobs created in Canada between 1978 and 1984 were in firms with less than 100 employees. And despite the heavy dependence on manufacturing in Ontario, 82% of the new jobs over this period still came from firms of this size.<sup>2</sup>

Furthermore, jobs created in smaller enterprises are generally less sensitive to economic downswings than those in larger firms. More than 190,000 jobs were lost in the Netherlands between 1970 and 1975, but only 500 of these were retrenchments in firms with less than 500 employees. The tasks performed by employees in smaller enterprises are less specialized and they are therefore less likely to be considered part of the variable costs of production. While a larger firm is likely to shut down the second shift, the smaller company is more likely to redeploy its workers to other necessary tasks.

## New Products and Processes

*SMEs produce more new products and processes and do so more quickly and less expensively than do their larger competitors.* In a sample of innovations introduced to the Canadian market between 1953 and 1973, smaller companies were found to be responsible for 24 times as many innovations per R&D dollar as large firms, and 4 times as many innovations per R&D person year than larger firms.<sup>3</sup> This more efficient deployment of R&D resources explains how small firms have historically made a significant contribution to the number of innovations brought to the market. Of 61 important innovations made during this century, more than half have come from small firms or independent inventors. The airplane, photocopiers, airconditioning, power steering and the zipper are impressive testimonials to the potential of small ventures. It is obvious that some of these innovations laid the foundation for the development of major multinational companies.

Research in the U.S. has also underscored the efficiency of smaller firms in introducing new products and processes. Specifically

- small firms produce 2.5 times as many innovations per employee as large firms;
- small firms produce four times as many innovations per R&D professional as large firms; and
- small firms bring their innovations to the market more quickly than their larger counterparts.<sup>4</sup>

In a 1982 report, the OECD suggests that small firms take the lead role in the development and application of new products. It is only after the product is well developed, when process change overtakes product changes, that the larger firms become credible forces in the industry. Witness the semiconductor industry. Smaller firms pioneered the early development of the semiconductor, and only when the product was sufficiently mature to allow larger firms to compete on the basis of process improvements and economies of scale in production did existing manufacturers of vacuum tubes enter the market. Similarly, Intel brought the first microprocessor to market; IBM later went into commercial production. Apple and Commodore introduced the first microcomputers; Digital and IBM waited to come into the market. Smaller firms like Genentech and Cetus have made the major advances in the biotechnology field to date. And the list goes on. *The nature of entrepreneurship makes small business managers natural leaders in new industry developments.*

## Engine of Growth

The research demonstrates that small and medium sized companies have become the engine of growth in the economy today. As markets have become more inter-



national, they have become more competitive. And as they become more competitive, the flexibility to react quickly and effectively with new product developments has assumed a growing premium. This flexibility is much more common in smaller firms. Even the major multinationals are now turning to their smaller counterparts and forming alliances with them to enhance their own competitiveness.

Many of these smaller companies have the potential to be the large companies of the late 1990s, assuming a growing responsibility for new wealth creation. But if that is to happen, it is important that they have access to sufficient amounts of the right kind of capital at the right times in their development to allow them to achieve their growth potential.

*Since pension funds are the single largest source of capital in the country, links between them and the high-growth segment of the SME sector will play a critical role in ensuring we grow significant and strong companies.*

### **3. Pension Funds and Venture Investing: Dispelling Some of the Myths**

The extent to which Ontario's public sector pension funds are now making venture investments, and their relative role in the venture capital market, is examined in considerable detail in the following chapter. However, the very fact that the Task Force is examining this link raises red flags in many institutional courts. Any suggestion of investment policies to encourage such investment activities raises fears of coercion to trade off financial objectives (and fiduciary responsibility) against social (and political) goals. It is therefore important at the outset to make certain points clear for the record.

A good deal of the reluctance on the part of many pension funds to make venture investments either directly, or through intermediaries, is based on the commonly held view that such investments would lower prudent financial standards. But as the analysis presented later in this report will demonstrate, these investments need not interfere with the financial objectives and the fiduciary responsibilities of pension funds.

Public and private sector pension funds should be encouraged to incorporate venture investing into their investment policies *to the extent it can make a positive contribution to the fund*. There is no apparent reason for treating public sector funds differently from their private sector counterparts, and there is therefore no argument for mandating public sector funds to make investments that cannot be justified on economic/financial grounds. However, pension fund investments in venture capital can be prudent and profitable, while at the same time contributing to the creation of new economic activity and new jobs.

## Arguments Against Venture Investing

Many pension fund managers will argue that if other investors are not making these investments, they are not able to deliver competitive returns. Yet research in Canada and the U.S. has shown that the performance of smaller public companies, on a risk adjusted basis, has exceeded that of larger public companies over the long term, suggesting there are in fact obstacles to the efficient allocation of capital. These inefficiencies are obviously compounded in the case of private companies.

There are three standard arguments made against pension funds participating in venture investments. The first is *these investments are not able to generate an adequate rate of return*. The performance of venture funds in Canada and the U.S. will be examined in some detail later in this report. However, the analysis indicates that the long term performance of *properly capitalized, professionally managed, diversified venture funds can and does exceed that of conventional investments*.

The second argument pertains to the *excessively high information and transaction costs*. These costs are very real, but do not, in themselves, constitute a test of financial viability. It is the net return, relative to risk, that provides the basis for assessment.

The third argument is that *venture investments are too risky for a pension fund portfolio*. As previously noted, there is considerable variance in the risk present across the spectrum of venture investments, and it is not the volatility of a particular investment, but the risk and equity of the portfolio as a whole that is relevant. Furthermore, venture investments constitute only one asset class within the total pension portfolio, and will represent only a small portion of the total portfolio. It is not logical to reject an individual investment on the basis of risk without looking at the reward/risk ratio of that investment and examining the risk in the context of the portfolio as a whole.

These arguments are clearly rooted in perception rather than reality. They reflect the view that venture investments, by definition, involve financial concessions. In fact, the venture capital industry in the United States, and more recently in Canada has grown (with considerable support from institutional investors), in response to the recognition that a properly managed venture portfolio can yield a superior rate of return.

A financially-driven venture investment strategy can serve the primary objective of pension funds to ensure the unimpeded provision of retirement benefits while enhancing economic activity. Good venture investments do not require financial concessions, and it is only such investments that should be contemplated by public or private sector pension funds.

## II. THE STOCK OF CAPITAL FOR VENTURE INVESTING

The stock (or supply) of capital for venture investing has been built through the participation of several different types of investors. This chapter examines the way in which pension funds participate in the venture capital market, the amount of capital committed by Ontario's public sector pension funds relative to the total amount committed, the factors influencing the rate at which capital is made available for venture investing, and expectations for the future supply of capital.

### 1. Pension Fund Investing: Direct Versus Indirect

Pension funds can invest either *directly* in high growth SMEs or *indirectly*, by committing capital along with other investors to pooled funds which are invested over time in SMEs (or investee firms) by professional venture capital managers.

Only the very large pension funds are in a position to even consider making direct investments. The risks associated with individual investments and the time and expertise required to make these investments pay off do not make direct investments logical candidates for most pension fund portfolios. The skills required to generate returns from a portfolio of venture investments differ from those associated with more traditional investments. Furthermore, the size of these individual investments relative to the size of the pension portfolio makes the time and attention required difficult to justify. Only the very largest Canadian pension funds are managed by investment professionals inside the corporation or organization. Of the twenty largest pension funds in the country, ten are staffed up to manage at least 75% of the pension assets in-house. Ontario Hydro, OMERS and Ontario Hospitals are three of the ten. (The Teachers' Superannuation Fund (TSF) and the Public Service Superannuation Fund (PSSF) are not included in the top twenty funds since they are not managed through marketable securities.) The bulk of the investments of the remaining ten largest funds, and the thousands of other Canadian pension funds are managed by external professional investment managers.

This management structure has direct implications for the amount of pension fund capital available for venture investing. Our research shows that some of the large internally managed funds are the most active venture investors. (OMERS has the largest portfolio of Canadian and foreign venture investments of any Canadian pension fund.) These funds have the ability to develop the expertise required to evaluate and monitor venture investment opportunities. Since they manage the bulk of the fund's assets, they are in a better position to educate their boards on the merits of venture investing over the longer term and to gain approval to allocate a small share of assets to this category. A fund's investment committee and board are much more likely to be willing to get involved in a new type of investment if these investments are being controlled by internal staff. And if the fund's senior management is committed to making



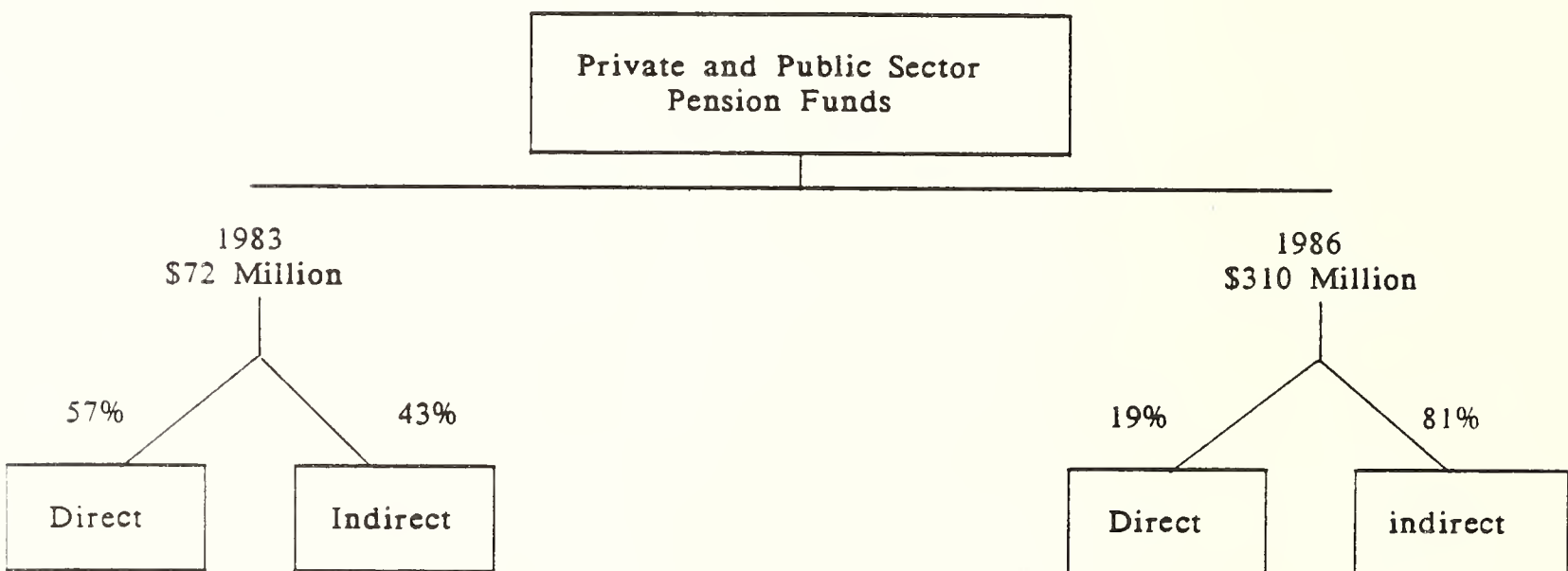
venture investments, the resources can be marshalled to develop and implement a strategy. Even the large pension funds, however, are increasingly making their venture investments indirectly through professional venture capital managers.

The first research done on pension funds and venture capital in 1984 showed that pension fund commitments for venture investing were divided almost evenly between direct and indirect investments. At the end of 1983, 15 of Canada's 20 largest pension funds had \$72 million committed to venture situations - \$31 million was invested directly in SMEs and \$42 million was invested indirectly through professionally managed pooled venture capital funds in Canada and the U.S. (see Figure 2).

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FIGURE 2

VENTURE INVESTMENT APPROACHES BY  
20 LARGEST CANADIAN PENSION FUNDS



At that time, OMERS had started to build its portfolio of venture investments (all indirectly through pooled venture funds) but none of the other large public sector funds in Ontario had yet entered the market. Between 1983 and the end of 1986, these twenty funds increased the amount of capital committed to venture investments to \$310 million. The amount invested directly rose from \$31 million to approximately \$60 million. But indirect investments through commitments to pooled venture funds in Canada and the U.S. *rose from \$41 million to more than \$250 million over the same period ... more than a six-fold increase.* The venture portfolios of these twenty pension funds collectively now represent 0.6% of assets, up from 0.3% at the end of 1983.

The level of venture commitments varies significantly among these large pension funds and even among the three Ontario public sector pension funds included in Canada's top 20. OMERS initiated an aggressive international venture investment strategy in 1981 and has built a venture portfolio which, in size, rivals that of most major pension funds in North America. Ontario Hydro and Hospitals of Ontario on the other hand, really only started to consider investments in pooled venture funds of any type in 1986. None of the public sector pension funds make direct venture investments at this time.

The results of the survey of the top twenty pension funds leads us to two conclusions:

- Several large pension funds are increasingly recognizing the viability of venture investments as an asset class; and
- Given the diversification required to achieve superior returns on venture investments, and the time and expertise required to make and actively manage these investments, most pension funds now prefer to participate indirectly in the venture capital market through professional venture capital managers.

We expect this trend toward indirect investing to continue, with one variation. As venture investment activity continues to increase, and a growing amount of capital is required to provide second and third round financings to existing portfolio companies, pension funds could well become a source for this capital, co-investing alongside experienced venture managers. This trend has already started to emerge in the U.S. and is quite likely to be replicated here.

Having established that the bulk of venture capital commitments by pension funds are being made through pooled vehicles, we turned our attention to those vehicles and their position in the market relative to other venture investors.

## *2. Pension Fund Investments in Professionally Managed Venture Funds*

Professionally managed *independent venture capital funds* are generally established by professional venture capital managers who raise capital from a number of corporate and institutional investors, including public sector pension funds. These investors commit their capital when the fund is established for a period of ten years or more. There are about 35 of these funds in Canada today, managing capital pools ranging in size from \$1 million to \$100 million.

The independent venture fund provides an effective mechanism for pension funds and other institutional investors to participate in the venture capital market. Such a fund enables a number of investors to pool their capital, creating one fund which is large enough to support individual investments of sufficient size to allow for meaningful participation while, at the same time allowing for an adequate number of investments to spread the aggregate portfolio risk. They also allow the supplier of capital (eg the pension fund) to be a passive investor, with the professional manager of the fund assuming responsibility for actively building and managing the portfolio. In return, the venture manager is paid an annual management fee and a predetermined share of the gains achieved over the life of the fund.

The capital for these funds is committed when the fund is formally established, and is drawn down as required (normally over a three year period). New investments are made over a three to four year period with a predetermined share of total capital (usually 15% to 30%) held in reserve to provide follow-on financings to existing portfolio companies as required. The returns are paid out over a 5 to 10 year period.

Between 1981 and 1986, \$509 million of new capital was committed to all professionally managed independent venture capital funds. Of this, *\$60 million (12%) came from Ontario's public sector pension funds*. A further \$105 million was committed by Ontario-based private sector pension funds. All other Canadian pension funds invested a further \$125 million, or 25% of the total. All Canadian pension funds therefore collectively accounted for \$290 million, or 58% of the new capital commitments (see Figure 3), by far the most important source of capital. Corporations, insurance companies and individuals accounted for 16%, 12% and 13% respectively of these new capital commitments.

FIGURE 3

NEW CAPITAL COMMITMENTS TO PRIVATE VENTURE FUNDS  
BY SOURCE; 1981-1986

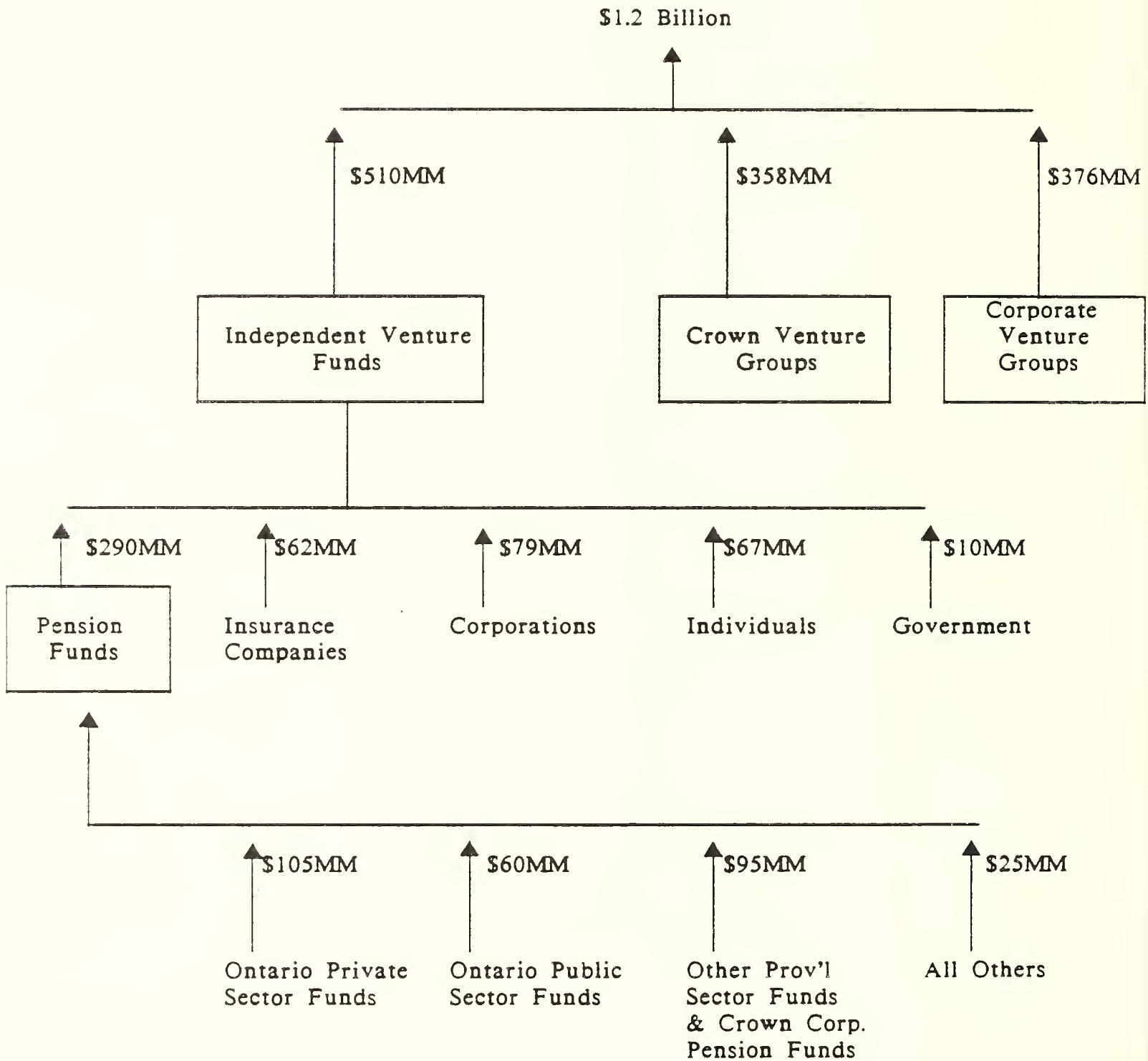
SOURCE OF CAPITAL	AMOUNT OF CAPITAL INVESTED (\$ Millions)	% OF TOTAL
Ontario Public Sector Pension Funds	60	12%
Ontario Private Sector Pension Funds	105	21%
All Other Pension Funds	125	25%
Corporations	79	16%
Insurance Companies	62	12%
Individuals	67	13%
Government	10	2%
TOTAL	509	100%

Total assets of Ontario's public and private sector pension funds were an estimated \$32 billion and \$55 billion respectively as of the end of 1985. The venture investment commitments by Ontario-based public and private sector pension funds (as shown in figure 4) account for about 0.2% of total assets in each case. Ontario's public sector pension funds, *as a group*, are already as involved in venture investing as their private sector counterparts. Ontario-based pension funds (both public and private) are also contributing their pro rata share of venture capital. These funds account for about 55% of all Canadian pension assets, and they invested an equivalent share of all venture capital committed by Canadian pension funds during the five year period.



FIGURE 4

SOURCES OF ALL NEW CAPITAL COMMITTED FOR VENTURE INVESTING  
1981-1986





In analysing the disaggregated data, a correlation between size of pension fund and venture investment activity becomes readily apparent, regardless of the public or private sector affiliation. Those funds with assets approaching \$1 billion or more tend to be managed in-house and are much more likely to have the expertise required to evaluate venture funds and to have launched an active venture investment strategy than smaller pension funds.

The participation of public sector pension funds in Canadian venture investments compares favourably with the U.S. experience on a relative basis. A total of \$1.1 billion (US) of public sector pension assets was committed to independent venture groups in the U.S. between 1981 and 1986, compared with \$145 million (Cdn) in Canada (although Crown Corporations are not directly comparable with public employee pension funds). A comparison of private sector pension fund commitments does not place Canadian funds in as favourable a light. The \$146 million invested by Canadian private sector pension funds over the five year period compares with commitments of \$4.2 billion (US) by their U.S. counterparts. The more active investment policies of private sector funds in the U.S. is a function of two key factors. First, the pension fund affiliates of technology driven multi-nationals have used their investments in venture funds as a window on new technology developments to be shared with their corporate counterparts. Second, the management structure of pension funds in the U.S. is different in that most funds do not assign full control of investment decisions to outside managers. Even those U.S. funds which use external managers maintain control over selected investment activities, including venture capital.

By way of contrast, the policy of the Board of one of the Ontario university pension funds interviewed requires that all investment decisions must be made by outside managers. Unless these external managers decide to participate in a venture fund (which few are likely to do), Board policy effectively precludes this pension fund from participating in the venture arena.

At the end of 1986, the independent Canadian venture capital firms had an estimated \$650 million in capital under management, more than three quarters of which had been committed in the previous five years. It is clear that Ontario's public sector pension funds, in the aggregate, are playing an important and active role as an investor in independent venture capital funds, thereby making capital available for investments in high growth SMEs. Pension funds overall have established themselves as the single most important source of capital for venture capital funds, and their continued investment is therefore crucial to the continued growth of the stock of capital committed for venture investments.

### 3. *Where Do the Independent Venture Capital Funds Fit?*

The independent venture capital funds described above comprise only one part of the Canadian venture capital market. Corporations also participate directly through their own internal venture capital operations and a small number of government, or crown sponsored venture capital groups also account for a significant share of the total stock of capital.

Some 20 Canadian corporations (financial and non-financial) have *corporate venture subsidiaries or divisions* which are directly associated with the corporation and which are generally allocated capital on an annual basis. The supply of capital being managed by these venture funds therefore tends to be roughly equal to the amount of capital invested.

About a dozen non-financial Canadian corporations (eg Northern Telecom, Molsons, and Noranda) have established venture investment arms which combine strategic and financial objectives in their investment strategies. Some of the large financial institutions have venture investment operations (eg TD Capital Group, Royal Bank Venture Capital), which have been a significant part of the formal venture community in Canada for many years. These corporate venture capital groups had a total of \$550 million under management at the end of 1986.

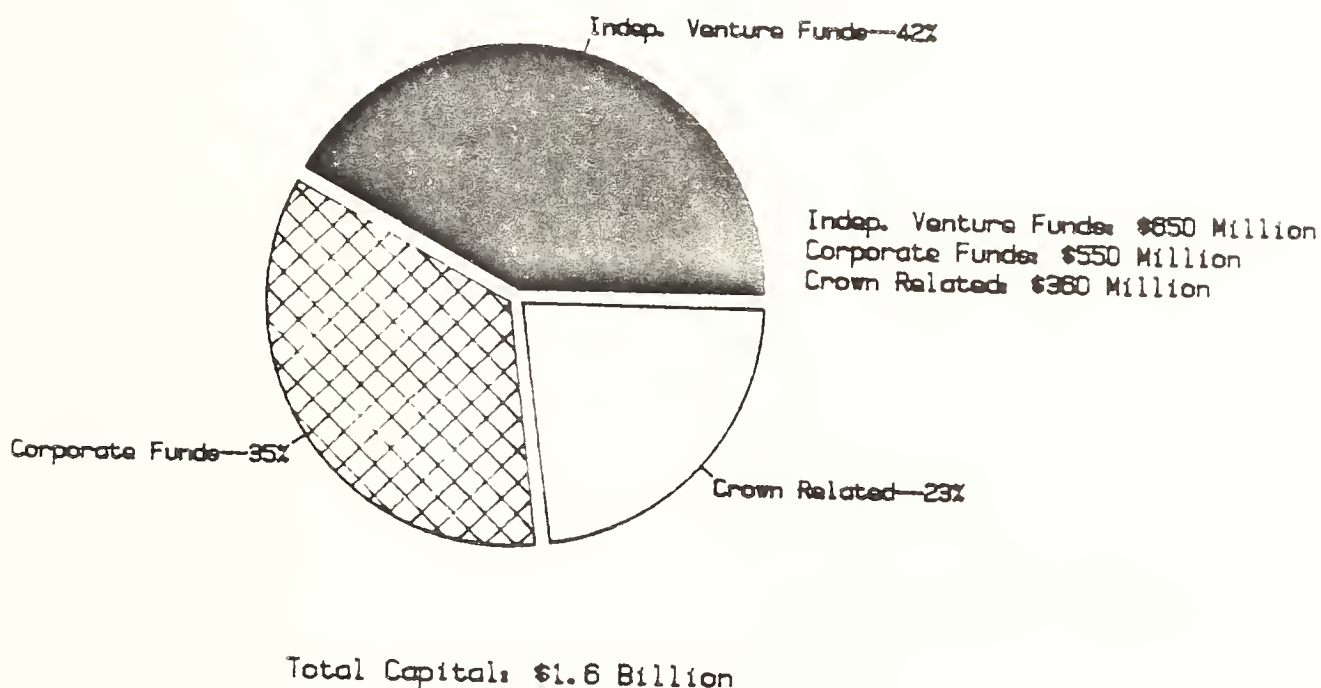
There are five government sponsored or *crown related venture groups* in Canada whose principal mandate is direct venture investing. Vencap Equities, in Alberta, was capitalized in 1983 with almost \$50 million raised from private sources and \$200 million in the form of a loan provided through the Alberta government. The Federal Business Development Bank has a venture capital division which operates independently from the rest of the Bank and is a significant player in the venture market in Canada. The Ontario Centre for Resource Machinery Technology (OCRMT) and B.C.'s Discovery Foundation operate on a smaller scale, (managing less than \$20 million each) but make direct equity investments in young and growing firms. The IDEA Corporation, whose mandate was to invest in early stage Ontario companies, was wound up in 1986, reducing the stock of committed capital by about \$50 million. (Innovations Ontario, the province's new early stage financing initiative, did not commence operations until late 1986). These crown related venture groups collectively had \$360 million under management at the end of 1986.

The capital base, or stock of the Canadian venture capital industry as a whole therefore stood at approximately \$1.6 billion at the end of 1986. Independent venture capital funds accounted for 42% of the capital base, while corporate and crown related venture capital groups accounted for 35% and 23% respectively, as shown in Figure 5. (This distribution contrasts noticeably with that in the U.S. where 75% of the capital base is managed by independent venture capital funds.)

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FIGURE 5

CAPITAL UNDER MANAGEMENT BY INVESTOR TYPE  
AS OF DECEMBER 1986



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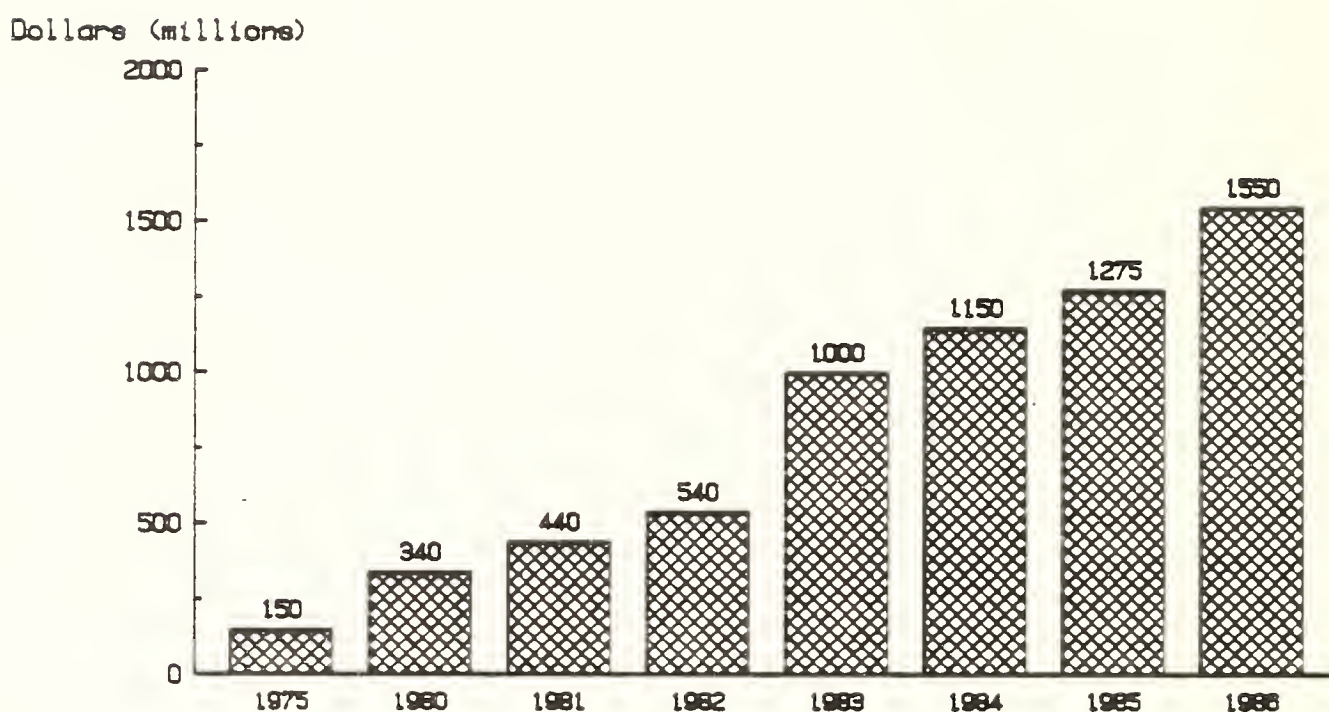
The total amount of capital being managed by the Canadian venture industry, including independent, corporate, and crown related venture funds was an estimated \$1.6 billion at the end of 1986. The compounded annual rate of growth in the capital base for the industry averaged almost 30% between 1980 and 1986, creating a stock of capital more than ten times larger than what was in place in 1975, as evidenced by Figure 6.

It should be noted that the capital managed by corporate and crown related venture groups can be influenced by and vulnerable to the changing agendas of corporate and political masters (as evidenced by the IDEA Corporation). The capital managed by independent venture capital funds, in contrast, is committed for the long term at the outset. Therefore, the more prevalent independent venture capital funds are within the organized venture community, the more secure is the long term supply of capital for venture investing.



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**FIGURE 6**  
**THE CAPITAL BASE:**  
**TOTAL CAPITAL UNDER MANAGEMENT FOR VENTURE INVESTING**



This relationship further underscores the importance of Ontario's public sector pension funds and other Canadian pension funds as a source of capital for venture investing, since they have proven to be the critical source of capital for independent venture capital funds.

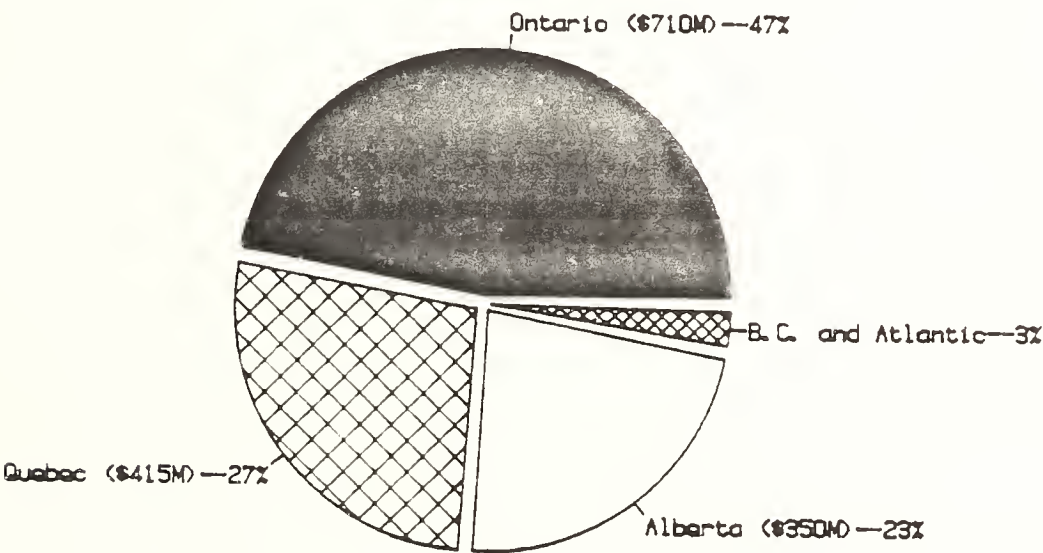
#### *4. Geographic Distribution of Capital Under Management*

Almost half of the total stock of capital committed in Canada for venture investing (\$710 million) is managed by Ontario-based venture capital groups.

Most investors readily acknowledge a preference to invest within a two hour travelling radius of their office. While this is not a hard and fast rule, the requirements of regular board meetings and periodic meetings with the company create a strong incentive to minimize travel time. The geographic distribution of capital under management therefore exerts some influence on investment patterns.

Almost all of the Canadian capital base is managed by venture groups located in Ontario, Quebec and Alberta (see figure 7). Prior to 1983, almost two thirds of the capital was managed from Ontario. But the arrival of Vencap Equities in 1983 significantly altered the regional distribution of the capital base. Ontario continues to be home to almost half of the capital under management; Quebec accounts for slightly more than 25%.

FIGURE 7  
REGIONAL DISTRIBUTION OF CAPITAL UNDER MANAGEMENT  
FOR VENTURE INVESTING AS OF DECEMBER 1986



5. Factors Influencing The Pension Fund Decision to Invest

As the preceding analysis has shown, the amount of capital being committed by Ontario's public sector pension funds and other pension funds has increased significantly in recent years, directly contributing to the growth in the industry's capital base.

The factors influencing a public sector pension fund's decision to invest are really no different than those influencing private sector pension funds. The liquidity and performance of venture investments are perhaps the most important factors, and, as such, they are addressed separately in Chapter IV. Other factors which have, and will continue to influence the extent to which pension funds are willing to participate in venture investments are:

- the regulatory environment;
- attitudes of pension fund managers towards venture investing;
- investment strategies of venture funds; and
- tax issues influencing venture investments.

The following discussion examines how these factors have influenced the supply of capital for venture investing to date and what impact they are likely to have in the future.

*(i) The Regulatory Environment: Becoming More Conducive to Venture Investing*

With the exception of those public sector pension funds which are currently managed outside of the market (primarily the Teachers' Superannuation Fund, the Public Service Superannuation Fund, and the Public Service Adjustment Fund) Ontario pension funds have historically been subject to stringent regulations which dictate their investment policies. The current investment provisions under the Ontario Pension Benefits Act (which piggy-backs the Canadian and British Insurance Companies Act) spell out a number of specific quantity and quality tests, prohibited investments and allowable exceptions.

The key restrictions imposed by the legislation which are relevant in the context of this discussion are as follows.

- **Common shares** may be acquired only in corporations that have paid a dividend or earned enough to pay a dividend of at least 4% of the book value of issued shares in at least four of the five previous years;
- **Preferred shares** may be acquired in any corporation that has paid all its dividends on preferred shares in each of the past five years, or whose common stock is eligible;
- **Unsecured debt securities** may be acquired if the corporation's common or preferred shares are eligible and if current indebtedness does not exceed three times total equity and total indebtedness.
- Any investment not otherwise eligible may be held under the **basket clause provision**, providing they do not exceed 7% of the fund's book value.



The nature of these regulations has conditioned pension fund managers and trustees to think in terms of "qualifying" and "non-qualifying" investments. Although the basket clause provision was introduced to ensure pension funds have the flexibility to respond to attractive investment opportunities which do not satisfy the prescribed criteria, many trustees and fund managers consider non-qualifying investments to be synonymous with low quality investments. As a result, in Canada about half of the 20 largest funds do not, as a matter of policy, make investments which do not meet the "qualifying" standards. Until very recently, OMERS was the only public sector fund with a portfolio on "non-qualifying" investments.

Small and medium sized private companies are rarely in a position to satisfy the earnings and dividend tests set out in the regulations, and, as a result, are almost always non-qualifying investments. The regulatory environment has therefore effectively mitigated against pension fund investing in such firms.

Until recently, the federal Income Tax Act reinforced these regulatory disincentives towards venture investing. To maintain their tax exempt status, Canadian pension funds must invest 90% of their assets (at book value) in Canadian securities. Limited partnerships, which provide pension funds with a tax efficient mechanism for making venture investments (in that they allow gains to flow through to pension fund investors on a tax free basis) were deemed to be foreign property under the Income Tax Act, even if the capital was invested in Canada. If a pension fund wished to invest in a venture capital limited partnership in Canada, it was therefore required to use part of the 10% allowed for foreign securities to do so. Asking a pension fund manager to trade off limited, liquid foreign investments for higher risk illiquid investments in small private Canadian companies was asking a bit much!

This regulatory environment gave many pension fund managers cause to dismiss the notion of venture investing out-of-hand, without seriously examining the merits of the investments. In the case of those public sector funds managed outside the market, venture investments have been precluded by statute.

### *Regulatory Changes*

Many of the regulatory impediments to venture investing have been, or are in the process of being removed. Based on provisions in the new Pension Benefits Act, now before the Ontario Legislature, the Pension Commission of Ontario, has recommended a move towards the prudent person approach to pension investing. This approach is defined as the exercise of care, diligence and skill in the administration of the fund that a person of ordinary prudence shall exercise in dealing with the property of another person using all relevant knowledge and skill that a person, by reason of his or her profession, business or calling, ought to possess.<sup>6</sup>

In essence, the prudent person approach would encourage pension fund managers to assess individual investments in the context of the total portfolio's asset mix and overall risk and liquidity, rather than against prescribed characteristics for each single investment. This regulatory approach is unquestionably much more conducive to the inclusion of venture investments in the pension fund portfolio.

The federal government has also taken steps to facilitate SME investing by pension funds. In regulations finalized in April 1986, the foreign designation was removed from limited partnerships invested primarily (90%) in Canada. Pension funds can, as a result, invest in Canadian venture capital partnerships without offsetting their limited allowable foreign securities. The government also went a step further and introduced a number of vehicles to allow pension funds to increase their allowable 10% limit on foreign holdings by \$3 for every \$1 invested in qualifying Canadian SMEs (with assets of \$35 million or less). In introducing these vehicles, the government made a strong policy statement. Rather than simply eliminating the disincentives to venture investing implicit in pension investment legislation, it chose to **actively encourage** venture investing by pension funds.

The new federal regulations raised a considerable stir in the pension community. First and foremost, pension fund managers objected to the linking of two unrelated investment activities ... foreign investing and venture investing. Second, both pension and venture fund managers objected to the complexity of the vehicles which could obscure the primary objective of active investing in the SME sector. Finally, many pension funds were wary of the incentive approach, suggesting such incentives are not necessary if the investment opportunities are really competitive with alternative investments.

The debate went on for a considerable period, with two positive outcomes. First, the discussion surrounding the legislation raised the profile of venture investing, exposing many pension funds to the issues and merits of these investments for the first time. Second, in late March of this year, the government simplified the regulations again allowing pension funds to benefit from all qualifying SME investments without confining them to the use of the new vehicles.

Finally, the Ontario Task Force on the Investment of Public Sector Pension Funds has, in commissioning this study, raised the issue of venture investing by public sector pension funds. If the TSF and the PSSF are moved into the market, these pension funds will also be in a position to make venture investments based on the considerations of prudence and performance expectations guiding the investment policies of other public and private sector pension funds.

In summary, the regulatory environment guiding pension fund investing in Canada, and in Ontario, has until very recently, implicitly discouraged venture



investing by pension funds. The new federal regulations make it clear that the Canadian government wishes to eliminate these impediments and actively encourage such investments.

The introduction of the prudent person approach will be an even more important step towards an environment conducive to venture investing. By encouraging pension funds to manage their assets on a portfolio basis, the stage will be set to allow pension funds to examine the risk/return characteristics of venture investments in the context of their impact on the characteristics of the aggregate portfolio, and to integrate higher risk, higher return venture investments with more traditional secure investments in pursuit of the best asset mix and returns for the portfolio as a whole. The relationship between the returns from venture investments and the risks and costs associated with these investments is discussed in more detail in Chapter IV. Public and private sector pension funds which are managed through marketable securities will therefore be operating in an environment conducive to venture investing.

*(ii) Management Attitudes: Vary Widely*

Attitudes are difficult to assess and virtually impossible to measure. But in an effort to get a reading on the attitudes now prevailing towards venture investing in the pension investment community, a number of pension fund managers, external investment managers and venture capitalist managers were interviewed.

As previously noted, the attitudes of many pension fund managers have been directly influenced by the nature of pension investment legislation in Canada. Equity investments which do not meet the eligibility criteria of an earnings track record are often assumed to be inappropriate for pension fund investments. Pension fund managers must preserve the security and integrity of the asset base to meet future benefit obligations and to many pension fund managers, the potentially high rates of return from venture investments imply a risk level which is in conflict with this fiduciary responsibility. Many managers still hold the view that venture investments are highly speculative, early stage and technology oriented (although the analysis has proven otherwise) and are therefore outside the realm of the prudent investor. As a result, they implicitly or explicitly exclude venture investments as an asset class from their investment policies, despite the fact that many large public and private sector pension funds, particularly in the United States, are now committing up to 5% of assets to venture investments in response to the growing evidence that professionally managed venture investments produce above average returns.

Having said this, it is equally clear that a core group of public and private sector pension funds have recognized the merits of venture investments and have built this asset category into their investment policies. OMERS' is by far the most active investor among the public sector funds. Air Canada, CN, CBC,

Alberta Teachers, and the Montreal Police pension funds are examples of other active investors. The analysis of venture capital commitments by source presented earlier in this report, shows that pension funds committed an estimated \$290 million to independent Canadian venture capital funds between 1981 and 1986, accounting for 57% of all new capital committed to these funds over this period. Some of the larger pension funds have also made sizable commitments to venture funds in the United States and in Europe.

However, it is our perception that, with a handful of notable exceptions, the pension fund commitment to venture capital investing is still embryonic and that the prevailing attitude is tentative at best. There are a number of factors contributing to this, including the management structure of the fund (internal or external management), the liquidity of the investment, the size of the investment, the transaction costs associated with the investment, and the perceived availability of investment opportunities.

### **Internally Managed Funds**

Even when a pension fund's assets are managed internally, gaining internal support for making venture investments is no easy task. While management proposes the investment policy, approval rests with an investment committee and ultimately the Board. The fund's management therefore has to be very committed to the merits of venture investing to do all the work required to bring the decisions makers to the point where they are comfortable in approving such investments. Furthermore, the fund's managers will unquestionably have to defend the decision on a regular basis, particularly in the early days, when there is little or no performance to report.

In many respects, OMERS is a good case in point. In 1981, OMERS' senior management recognized the need to identify investment opportunities in non-traditional areas given the growth in pension assets was outstripping the growth in capital markets by a sizable margin. Considerable research was required to assess the potential of oil and gas, real estate, term lending, private placements, and venture capital markets. More work still was required to prepare a case for building these asset classes into the investment strategy. As with most large funds, members of the investment committee were experts in stocks, bonds and mortgages. The learning curve was steep to get to the comfort level necessary for approval. The board supported the Committee's approval and OMERS embarked on a broader investment strategy.

Today OMERS' non-traditional investments account for more than 25% of the portfolio. Although the venture capital portfolio is the largest of any institutional investor in Canada, it accounts for approximately 1% of assets, or an amount which in absolute terms could be invested in traditional securities in a dramatically shorter period of time with much less effort and much quicker returns. It is the expectation of *higher* returns that underlies the decision in the first place, but the intervening period can be trying.



The performance measurement system for pension fund investing is relatively short term in nature. When the payoff from venture investments can be five to ten years down the road, it is quite understandable why many managers are not eager to pursue the venture capital option. The effort required for approval is disproportionate to the capital involved and the manager could well be seen to be putting his or her reputation on the line for what many trustees still consider to be *risky business*. Even once approval has been given to venture investments as an asset class, the pension fund managers must be prepared to invest in the resources necessary to build and monitor the portfolio, while accepting the lack of returns in the early years.

### **Externally Managed Funds**

The majority of Canadian pension funds are managed externally by professional investment managers. Normally pension fund assets are allocated to two or three outside investment managers (sometimes more), each of whom manages capital for a large number of clients. These managers specialize in traditional investments - ie. stocks, bonds and in some cases mortgages. Foreign investment managers are often used to manage the foreign components of pension fund portfolios.

Since public and private sector pension funds are anxious to earn good returns on their pension assets, there is considerable pressure on investment managers to demonstrate these returns on an on-going basis. Performance is measured on a quarterly basis by independent measurement firms and reported to the pension fund clients. There are several disincentives to externally managed pension funds making venture investments.

First, in most cases, the outside manager is given total discretion for investment decisions. Unless the pension fund client specifically instructs a manager to invest in venture capital situations, the manager must take the initiative to do so. Investment management firms for the most part have no expertise in the venture capital area and are therefore unlikely to place some of the capital they manage with another professional (venture capital) manager. Furthermore, they would ultimately lose the management fees on the capital committed to venture managers.

Second, the quarterly performance of investment managers dictates a relatively short-term orientation in their investment strategies. The investment management business is highly competitive and returns are key to client loyalty. There is therefore little incentive for investment managers to educate themselves and their clients on venture investment opportunities and to make investments that will not contribute to (and will in fact hinder) short term portfolio performance. This issue has been particularly relevant in recent years. Investment managers find it difficult to justify carrying an investment at book value (or at a loss as is often the case in the early years of a ven-

ture fund) at a time when the market for traditional investments is reaching all time highs.

Third, investments managers place a very high value on the liquidity of investments, a quality venture investments cannot offer.

Fourth, most investment managers are still skeptical of the quality of SMEs in Canada and of their ability to achieve significant growth. The theory of "too much money chasing too few deals" appears to be widely held in the investment management community. In the words of one manager, "capital is not a problem. The problem is the product available - there are too few good SMEs and even the good ones are over priced."

Finally, the "hassle quotient" associated with venture investments is too high in the eyes of many investment managers. Individual investments in venture funds are relatively small; the client must be made comfortable with the investment; there is no liquidity and there is a performance penalty in the short term. All in all, it is not difficult to understand why outside investment managers by and large have not become active venture investors. However, there are some signs of a growing recognition of the potential of venture investments within this community.

Two Canadian investment management firms have formally joined forces with venture capital management teams to form new venture capital funds. In 1982, Asset Management International joined forces with Storie, Mortimer and Associates to establish Vengrowth Capital Funds. In 1985, Beutell Goodman teamed with Michael Boyd and Edward Higgins to form BG Acorn Capital Fund. In both cases, the investment managers recognized that a professionally managed fund to be invested in private companies represented a new and attractive opportunity for their clients. As a result of these affiliations, both venture funds have a higher proportion of externally managed private and public sector pension fund investors than most other venture funds.

There are also three or four investment management firms that now actively consider investment opportunities in venture funds on behalf of their clients. Discussions with these managers suggest a growing recognition, in light of continued asset growth, of a need to identify new long term investment options with good performance potential. Venture capital funds represent one such option.

### *(iii) Investment Strategy of Venture Funds*

A closer examination of the new venture funds established in 1986 and those currently raising new capital reflects the perception on the part of venture investors that more pension funds and investment managers are willing to consider alternate investment opportunities. Of the \$145 million of new capital committed to independent private venture groups in 1986, \$126 million (85%)



went to late stage or mezzanine funds. (As previously noted, 67% of the new capital committed to independent venture funds in 1986 came from pension funds.) Great Lakes Investments, Canadian Pension Equity Limited and Canadian General Capital, are all focussing exclusively on investments in well established firms which have the potential to go public within two to three years and on leveraged buyout financings.

The companies being financed have a management team in place and an established track record. The anticipated holding period for such investments is normally two to three years - which is more palatable to many pension funds than the five to ten year period expected for earlier stage investments. While the target returns are often lower for such investments, the risk is perceived to be lower as well.

(As an aside, it is worth noting that many pension funds do not differentiate between the "nature" and the "degree" of risk in the context of venture investing. Earlier stage investments do normally carry a higher business risk than investments in more mature companies. But at the same time, they generally provide a lower price risk and involve a smaller amount of capital than financings in more mature companies. Therefore, while the risk associated with an expansion financing for an established company, for example, is very different from that of a startup financing, it is not necessarily lower.)

Since pension funds are such an obvious and important source of capital in the marketplace, venture capital managers are structuring their investment vehicles to make them as attractive as possible to pension funds. Those pension funds not previously exposed to venture capital are much more likely to be comfortable with investments in companies which are apt to be publicly traded in the foreseeable future than with startup companies. And for those pension funds which have invested in balanced or early stage venture pools, these later stage vehicles offer a good diversification opportunity.

This trend is likely to continue for the next two to three years. However, in our view, three factors will contribute to a shift in this trend in the medium term. First, the increased competition for later stage investments will inevitably put upward pressure on the price of these investments over time, thereby forcing investors downstream to maintain performance. Second, the returns to be gained on mezzanine financings (in companies almost sufficiently developed to go public) are highly dependent on the market for initial public offerings, (IPOs) which fluctuates like all other markets. If the market is not receptive to IPO's as the investments mature, the holding period will be lengthened and additional financing could be required until the public markets can be more readily accessed. The impact of these cycles will help pension fund investors understand the need to diversify their portfolio by stage.

Finally, it is completely logical for pension funds to "cut their teeth" on investments that most closely approximate familiar territory when first getting

involved in the arena of smaller private company financings. It is quite likely that, assuming these investments perform well for them, the pension funds will grow more comfortable with the lack of liquidity and the fundamentals of private company investing and become more open to the potential venture investment vehicles which will participate in earlier stage companies.

*(iv) Taxation: Gains Must Be Taxed As Gains*

One significant tax-related issue hangs like a storm cloud over the venture investment process - the continued uncertainty about the tax treatment of gains made through the liquidation of venture investments. A number of Canadian venture capital firms have been reassessed by Revenue Canada, which has reserved the right to consider net revenues accruing to a venture capital fund as income rather than as capital gains. Such tax treatment will reduce the potential returns, thereby reducing the attractiveness of pooled venture investment vehicles to pension fund investors.

This issue has been bouncing back and forth between Revenue Canada and the Department of Finance with no resolution to date. Hopefully, the tax reform proposals, expected to be released within the next month will remove the uncertainty once and for all.

*6. Realistic Expectations For Future Supply of Venture Capital*

Ontario's public sector pension funds have invested \$60 million in independent venture capital funds in Canada over the past five years. With the exception of OMERs, few of the funds have made more than one or two investments, with the size of investment ranging from \$250,000 to \$5 million. We would expect these public sector funds to continue to respond to market conditions, and to increase their venture investments accordingly.

Since investments by Ontario's public sector pension funds accounted for 12% of all new capital committed to independent venture capital funds over the past five years, and since these independent funds collectively account for only 42% of total capital under management, future increases in the level of investment must be considered in the context of the total supply of capital.

*(i) Status Quo Growth*

The stock of capital committed for venture investing increased at an annual compound rate of 29% between 1981 and 1986. When the somewhat distortionary impact of the \$200 million contribution from the Alberta Government to Vencap (in 1983) is removed, the annual growth rate for the period was 25%. If this aggregate growth continues over the next five years, the total stock of committed capital would reach \$4.6 billion by 1991 - more than three times the current stock.

However, given the composition of the venture capital industry, we expect the base of capital managed by the three different types of investors (corporate, crown, and independent), to grow at different rates. Within the corporate group we expect to see some new financial institutions entering the market with internally managed venture capital funds, but there is not likely to be significant growth in the capital committed by existing players. Most non-financial corporations are, in our view, more likely to invest in independent funds rather than establishing an internal venture capital initiative. It is therefore realistic to expect an annual growth rate of 15% in the capital managed by corporate venture capital groups - bringing their share of the capital base to \$1.1 billion by 1991.

Given the prevailing fiscal environment, governments are more likely to seek ways to encourage private sector investing rather than committing more capital directly. With annual allocations to Innovation Ontario, capital managed by crown venture capital groups is likely to grow by 5% per year, reaching \$450 million by 1991.

Most of the growth in the capital base is likely to come through independent venture capital funds. It is reasonable to assume that the 23% rate of annual growth in capital managed by these funds over the past five years will be sustained which would increase the stock of capital managed by independent funds to \$1.8 billion in 1991 (from \$650 million at the end of 1986.)

Under these assumptions the total stock of capital for venture investing would grow by an average of 17% per year, reaching \$3.5 billion by 1991 - an increase of \$1.9 billion over the five year period. These projections assume that Ontario's public sector pension funds will be treated the same as private sector funds and not mandated to achieve a prescribed level of investment.

#### *(ii) Incremental Growth from TSF and PSSF*

The entrance of the TSF and PSSF into the market could lead to some incremental growth in the capital base, above and beyond the levels projected above. Assuming that these funds enter the venture capital market in an orderly fashion, building a portfolio over time (as OMERS has done), there will be no distortions to the market.

Even if these funds launch an aggressive venture investment strategy, starting to invest in 1990 and investing 3% of cash flow by 1992 the net increase to the stock of capital would be only \$100 - \$150 million, or only 3% more than the amount projected under status quo conditions.

The analysis in the following chapter suggests that, even with relatively conservative projections of the future demand for venture capital, the SME sector will readily absorb this new capital.



### III. DEPLOYING THE CAPITAL: VENTURE INVESTMENT TRENDS

Pension funds base their decision to invest in a professionally managed venture capital fund on their confidence in the ability of the manager(s) and on their assessment of the market opportunity offered by that manager. Since the individual investment opportunities are not at the door when the capital is committed, pension funds must examine recent trends in the venture capital market to assess the market opportunity and proposed investment strategy.

The Canadian venture capital market has been building momentum since the early 1980's, as evidenced by the rapid growth in the base of capital committed for venture investing. But how rapidly is this venture capital being deployed and how effectively is the demand for capital absorbing the increased supply? The analysis presented in this chapter demonstrates that *the demand for venture capital is keeping pace with the rapidly growing supply.*

As was noted in the introduction to this report, Ontario's public sector pension funds invest alongside other pension funds and other types of investors in independent venture capital funds. This capital is then invested by professional venture capital managers in high growth SMEs on behalf of all of the investors.

Therefore, while we have been able to identify the relative contribution of Ontario public sector funds to the supply of capital, it is more difficult (and not necessarily meaningful) to determine the pro rata share of public sector funds in each individual investment.

The analysis in Chapter II showed that Ontario's public sector funds as a group, and Ontario's private sector funds as a group, have committed an equal share of assets (0.2%) for venture investing, and together Ontario-based pension funds accounted for about one third of all capital committed to independent venture capital groups, so are ultimately the source for about one third of the capital invested by these venture funds.

In the analysis following, we have examined the investment patterns of those independent venture capital funds with pension fund capital relative to all other venture investors (corporate venture groups, crown venture groups, and those (few) independent venture groups which have no pension fund investors. In so doing, we have determined that pension sponsored venture funds have invested differently than the industry as a whole.



### *1. Increased Supply of Capital: Stimulating Demand*

The strong growth in the capital base for venture investing in Canada evokes concern on the part of some that there is too much capital available ... *too many dollars chasing too few deals*. But the number of deals being done in Canada has risen steadily in recent years, and the demand is absorbing the supply.

As figure 8 illustrates, there has been a roughly parallel relationship between new capital committed and capital disbursed since 1981, with the exception of 1983, (when Vencap Equities was established, adding \$250 million to the capital base.)

A total of \$1.2 billion of new capital was committed to independent, corporate and crown venture groups between 1981 and 1986 and \$932 million was disbursed. The net remaining uninvested capital for the period at the end of 1986 was therefore \$260 million. With annual disbursements by Canadian investors now exceeding \$200 million, *demand for capital is clearly keeping pace with the rapidly growing supply*.

Although prevailing market conditions will influence pricing at any point in time, investors do not deliberately put money into bad deals. The sharp increase in activity levels therefore suggests an increase in the availability of good deals.

In our view, *the demand for venture capital is stimulated by the supply of such capital, and that as more capital becomes available, the number of attractive investment opportunities increases accordingly, over time*. As the manager of a major Canadian pension fund put it "If there are too many dollars chasing too few deals - more new deals will get created. The distortion will be temporary." In other words, the market will find its own balance.

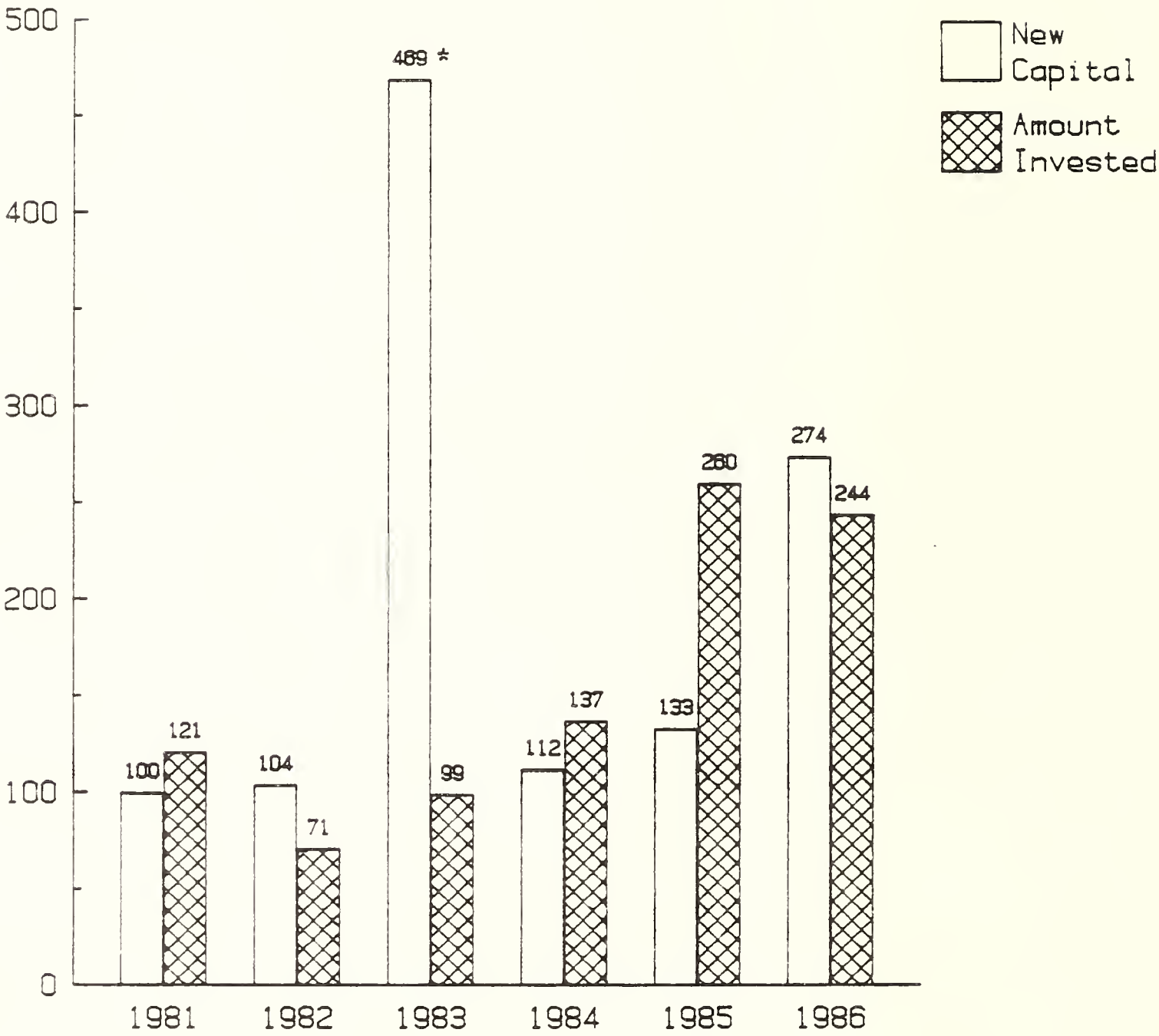
The supply of capital has grown in a strong and orderly fashion, and demand has kept pace. While there is no shortage of venture capital funds at present, neither is there a sizable surplus. (A one year supply of capital is a fairly conservative cushion.) The market will continue to determine the ability of the SME sector to productively employ new equity capital and investors should base their decision to invest on these market signals.

That is not to say that there cannot be crowding, or gaps, at times in certain segments of the market (with consequent difficulty in finding good new deals), but this does not suggest that the market as a whole is saturated.

FIGURE 8

NEW CAPITAL COMMITMENTS RELATIVE TO INVESTMENTS:  
DEMAND IS ABSORBING INCREASES IN CAPITAL

Dollars (Millions)



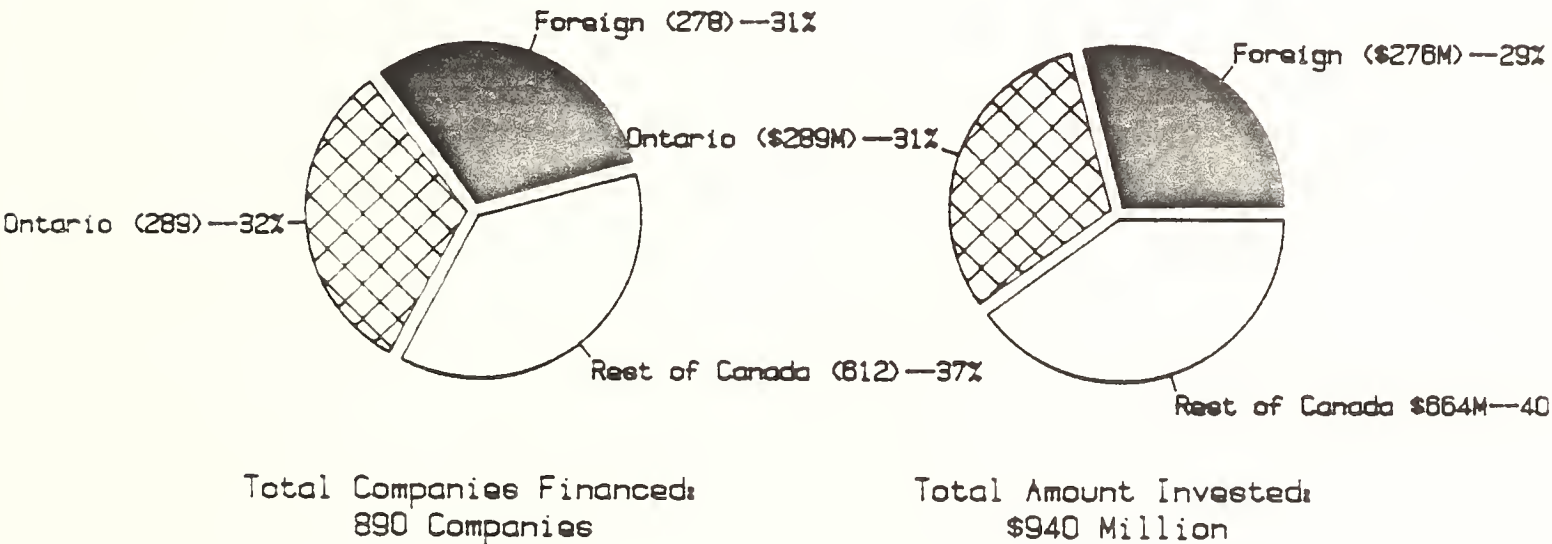
Total New Capital: \$1,192 Million  
Total Amount Invested: \$932 Million  
Net Capital Available: \$260 Million

2. Recent Investment Trends: How Much Invested in How Many Firms?

At the beginning of this decade, annual disbursements by the Canadian venture capital industry were running at about \$10-\$15 million; they are currently running at \$200-\$250 million. (Detailed statistical tables are presented in Appendix A). The SME sector is clearly responding to the changing venture capital market.

Between 1981 and 1986, Canadian venture capital funds financed 890 SMEs with total capital disbursements of \$940 million. As figure 9 illustrates, 289 of these (32%) were Ontario-based SMEs and 612 (69%) were Canadian companies.

FIGURE 9  
GEOGRAPHIC DISTRIBUTION OF AGGREGATE INVESTMENTS  
1981-1986



Of the \$940 million invested by Canadian venture investors during the six year period, Ontario based firms attracted \$289 million (31%); \$664 million (71%) was captured by Canadian companies.

When the investments of independent venture capital funds with public and private sector pension fund investors are analysed relative to aggregate investment activity by the industry as a whole, some interesting and relevant trends emerge (figure 10).

- Of the 440 Canadian companies receiving venture financing between 1983 and 1986, 208 (47%) were financed in whole or in part by venture groups with public and private sector pension fund investors.
- Of the 193 Ontario based companies financed during this period, 106 (55%) received their capital from pension-backed venture funds.
- *A full 70% of the \$220 million disbursed to Ontario companies during this period came from independent venture capital funds with public and private sector pension fund investors (compared with 60% of the \$560 million invested in all Canadian companies).*

**Independent venture capital funds with pension fund capital have become the dominant force as venture investors in Canada, and more particularly in Ontario.** Although these independent venture funds account for only 42% of total capital under management, they have become, as a group, the most important venture investors in Canada. The continued active investment by pension funds in these pooled venture capital funds is therefore critical to sustaining growth in venture investment activity in Ontario.

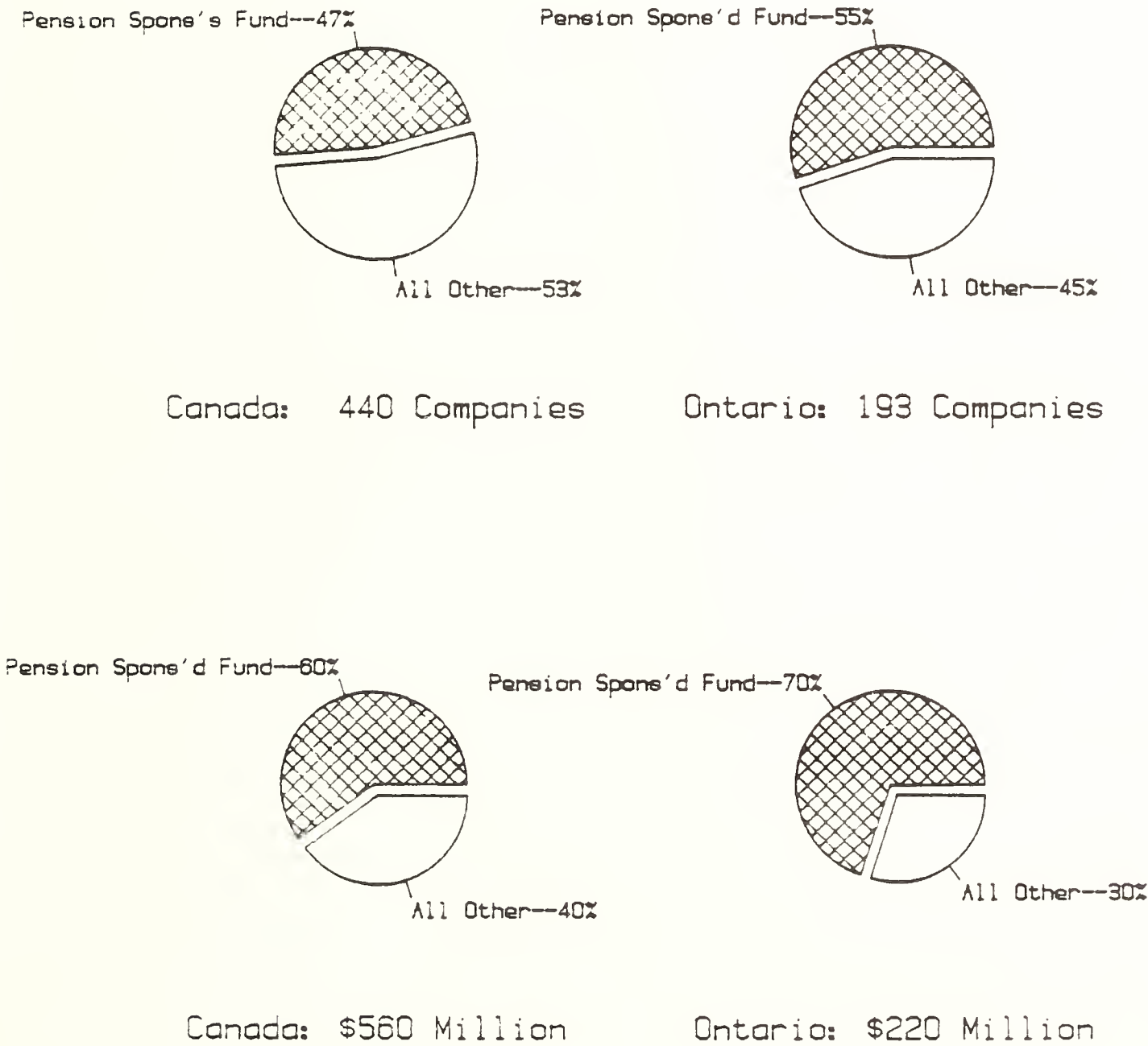
The impact of the investment activity of pension-sponsored venture funds has been greater in Ontario than in other provinces. The amount of capital invested by pension-backed venture capital funds in Ontario companies relative to the total amount of venture capital invested in Ontario companies has been increasing each year, rising from 59% in 1983 to 84% in 1986. (This trend is influenced in part by the fact that pension sponsored venture groups that invest using participating debt instruments tend to make larger investments and to concentrate these investments in Central Canada.)

The supply analysis suggests that public and private sector pension funds are investing in equal amounts relative to their assets. Given that independent venture capital funds with pension fund investors are concentrated in Ontario, and to a lesser extent in Quebec, it is quite likely that increased investment by public or private sector pension funds in new venture funds will lead to increased venture investing in Ontario-based companies.



FIGURE 10

SHARE OF TOTAL VENTURE INVESTMENT ACTIVITY ACCOUNTED FOR  
BY VENTURE FIRMS WITH PENSION FUND CAPITAL



### *3. Ontario-Based SMEs Benefit From Pension Capital*

How has Ontario's share of venture capital investments fluctuated over time? At the beginning of the decade, most of the professionally managed venture capital was based in Ontario, and Ontario based companies captured about half of the venture capital invested in Canada as a result. Since that time, however, the venture community has broadened. The establishment of Vencap Equities, an active venture division within the FBDB, and new independent funds outside Ontario has led to an increase in the relative share of activity taking place in other provinces. In 1986, Ontario firms accounted for 42% of all Canadian companies financed and 38% of the total capital invested. Despite this loss in relative share, the absolute level of investment activity has continued to increase. (Figures 11 and 11A)

Part of this increase has been fuelled by a reduction in the amount of capital being invested by the Canadian venture capital community in the U.S. In 1983, only 67% of all companies financed by Canadian venture investors were Canadian. By 1986, this share had risen to 87%. As a result, the number of Ontario and Canadian SMEs securing venture capital has been steadily increasing. A total of \$208 million was invested in 157 companies in 1986, a 2.5 times increase over a four year period. The rate of increase in Ontario financings was somewhat more moderate.

Our research suggests that the absolute and relative increase in venture financing going to Canadian SMEs is a response to the growing number of attractive investment opportunities in small and medium Canadian enterprise.

### *4. Stage Analysis: Pension Sponsored Venture Funds Prefer Later Stage*

As previously noted, venture capital is invested across almost the full spectrum of the corporate development cycle, and is not restricted to early stage companies. At the one end of the spectrum, we have companies at the seed or startup stage and not yet in commercial production and at the other, we have companies which are well developed and almost ready to go public and are good candidates for mezzanine or LBO financings. In the middle we have established companies with sales and profits in need of expansion capital to achieve the next level of growth.

Until very recently, most venture funds in Canada operated as "balanced funds", in that they did not focus their investments on companies at a particular stage of development. Corporate venture divisions were perhaps the exception to this approach, in that some non-financial corporations were established to explore certain technology-based opportunities while still in the early stages, and the venture divisions of some of the financial corporations tended to concentrate on opportunities in more established companies.

FIGURE 11

TOTAL VENTURE INVESTMENTS IN CANADIAN  
AND ONTARIO SMEs; 1981-1986

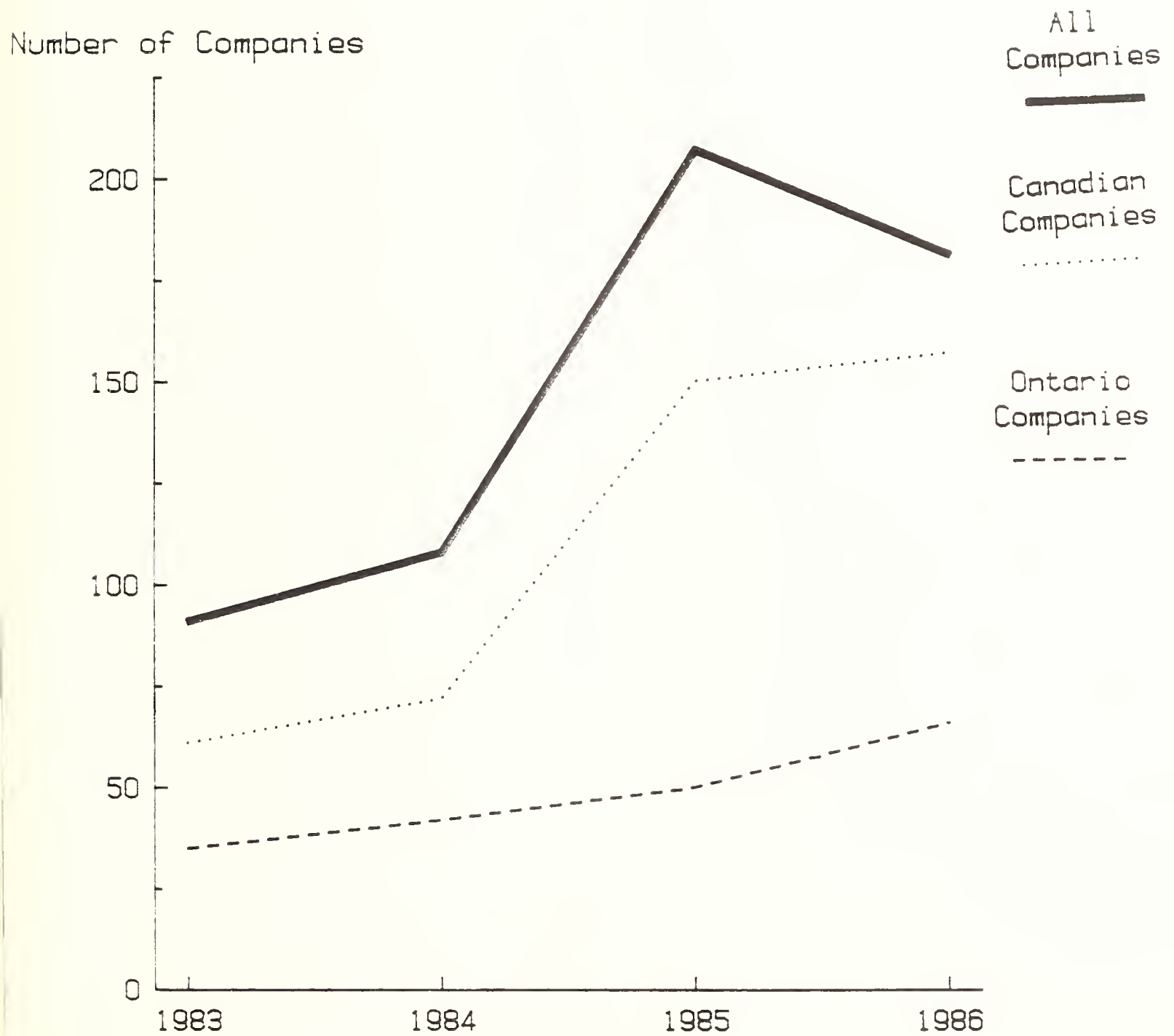
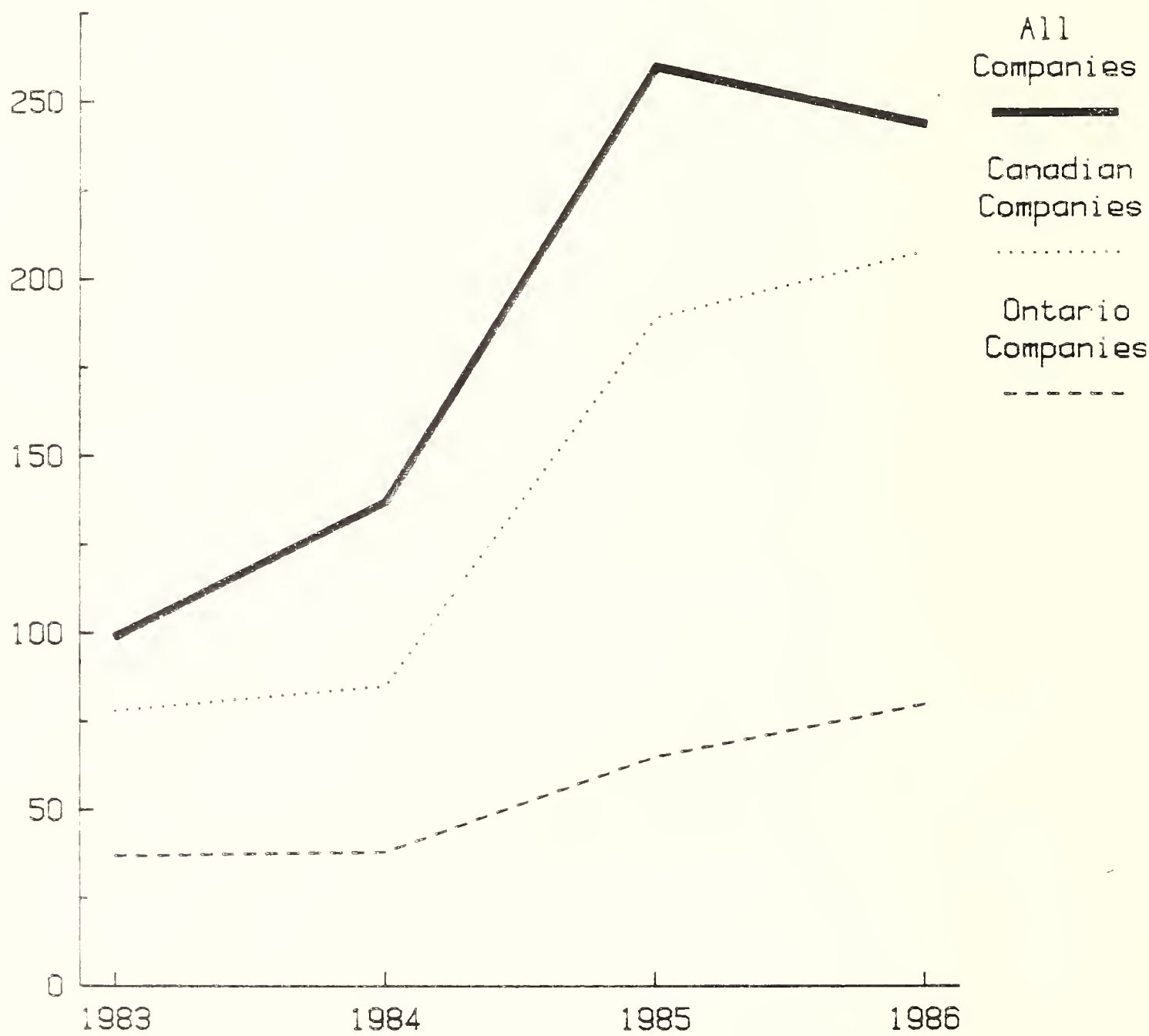


FIGURE 11A  
TOTAL VENTURE INVESTMENTS IN CANADIAN  
AND ONTARIO SMEs; 1981-1986  
(Amount Invested)

Amount Invested (Millions)





In the past two years however, there has been a noticeable change in this trend. Several of the new independent venture funds have been established to finance expansions in established companies and buyouts of existing companies or divisions. Canadian Pension Equities Limited, for example, was capitalized with \$60 million of public and private sector pension fund capital in 1986 to invest in expansions, mezzanine financings and LBOs.

This shift is taking place for two reasons. First, many pension funds are more comfortable with later stage venture financing, since they are more familiar with the dynamics of an established company than with those of a startup situation, and perceive the risks to be lower (although, as we have pointed out, the risk will be different but not necessarily lower). Secondly, venture investors see the opportunity to invest larger amounts of capital (and therefore raise larger funds) by concentrating on expansion and other late stage investments.

Between 1983 and 1986, 34% of the 193 Ontario SMEs securing venture financing were early stage firms. An equal share of the Ontario SMEs financed were established and in need of expansion capital to achieve the next level of growth. LBO's accounted for 13% of all financings. These patterns did not differ significantly from those experienced at the national level, as illustrated by figure 12.

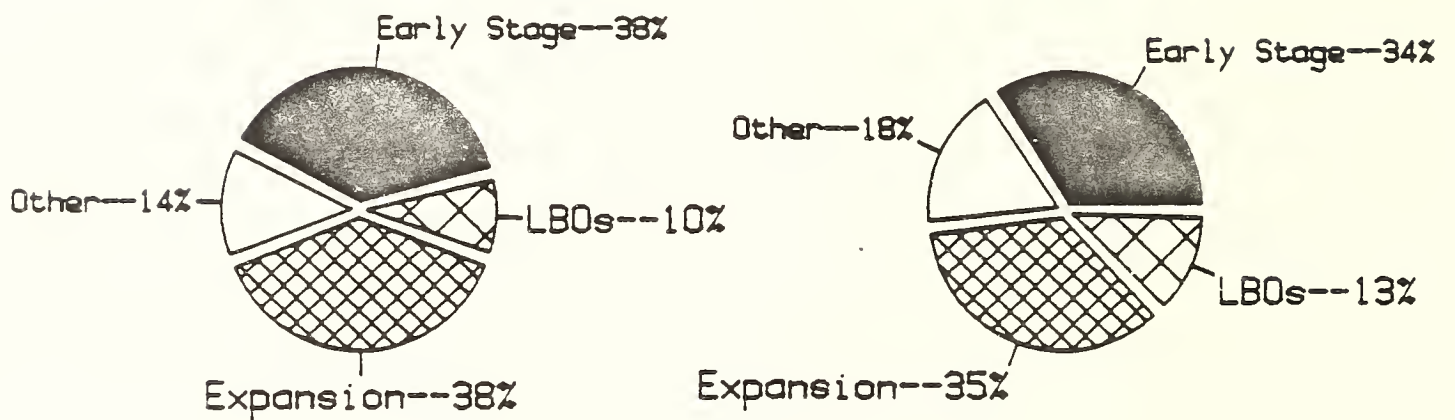
As one would expect, the distributions are different in the context of the total amount invested. Companies in the early stages of their development generally require less capital than those gearing up for expansion. Just less than 25% of the venture capital invested over the period in Ontario-based SMEs went to early stage companies, while companies in the expansion stage captured 32% of the total. LBO financings accounted for 21% of the total amount invested.

### **Preferences Reflected in Investments**

Our analysis of the stage distribution of the portfolios of those venture capital funds with pension fund capital shows a distinctly different profile than that for the industry as a whole (figure 13). *The investment portfolios of pension-sponsored venture funds, as a group, were skewed significantly towards later stage financings.* Only 26% of the Ontario SMEs financed by these groups were early stage firms, and they captured only 19% of the total amount invested (compared with 34% and 24% respectively for the all venture capital investments in Ontario companies).

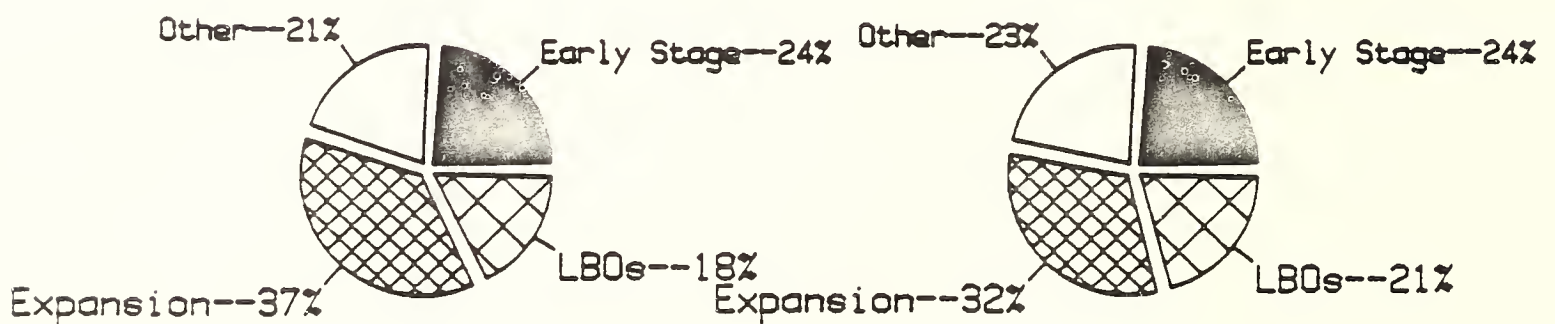
FIGURE 12

AGGREGATE VENTURE INVESTMENTS IN SMEs  
BY STAGE OF DEVELOPMENT; 1983-1986



Canada: 440 Companies

Ontario: 193 Companies

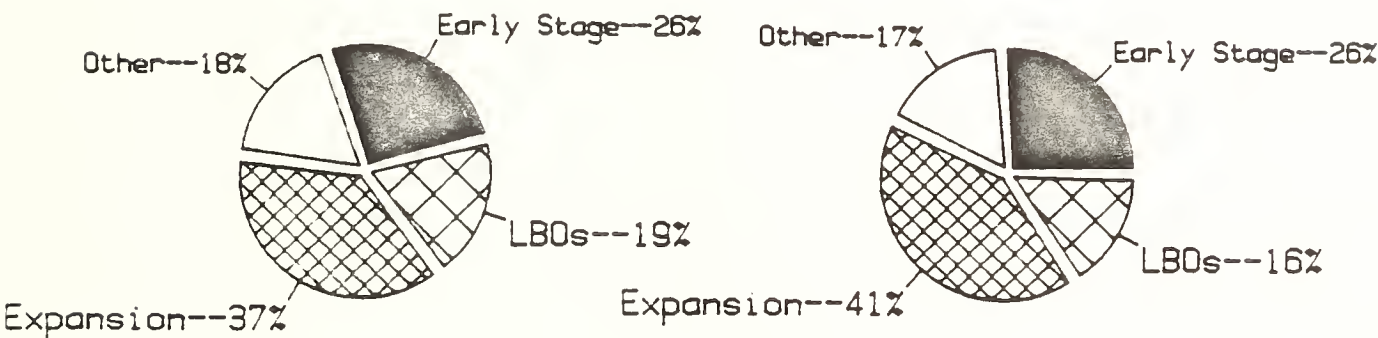


Canada: \$560 Million

Ontario: \$220 Million

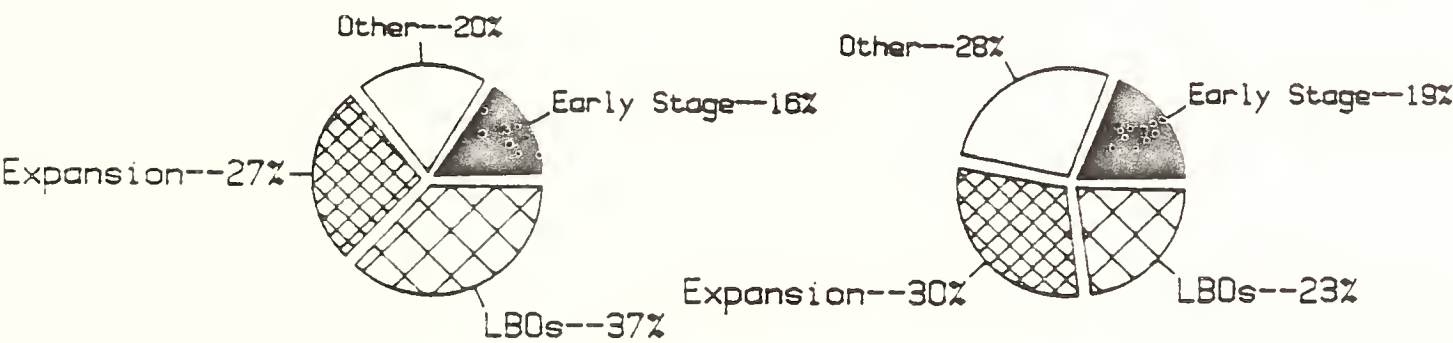
FIGURE 13

DISTRIBUTION OF INVESTMENTS BY VENTURE GROUPS  
WITH PENSION CAPITAL BY STAGE OF DEVELOPMENT; 1983-1986



Canada: 208 Companies

Ontario: 106 Companies



Canada: \$335 Million

Ontario: \$153 Million

This trend suggests that pension fund preferences are, to some extent at least, influencing the way in which venture capital is being invested. It is quite predictable that large pension funds (be they public or private sector) with no previous exposure to venture capital, will feel more comfortable investing in a late stage or LBO fund than in an early stage technology fund. Similarly, investment managers willing to invest in a venture capital fund on behalf of a smaller pension fund client is also apt to gravitate towards later stage funds. Venture capital managers have recognized this preference and have packaged more funds to appeal to the upper end of the market.

Further evidence of this trend is provided in figure 14, which shows the average amount invested in companies at different stages by all venture investors and by those groups with pension investors. As might be expected, the average investment by pension-sponsored venture capital funds is generally higher than the average amount invested by all investors, regardless of the stage of development.

The preference of many pension funds for more established companies and their desire to see larger amounts of capital invested, as reflected in recent investment trends, suggests that *pension sponsored venture capital funds are likely to commit a smaller share of their capital to early stage companies than other types of investors*. These funds appear more likely to concentrate on more mature situations, particularly leveraged buyouts.

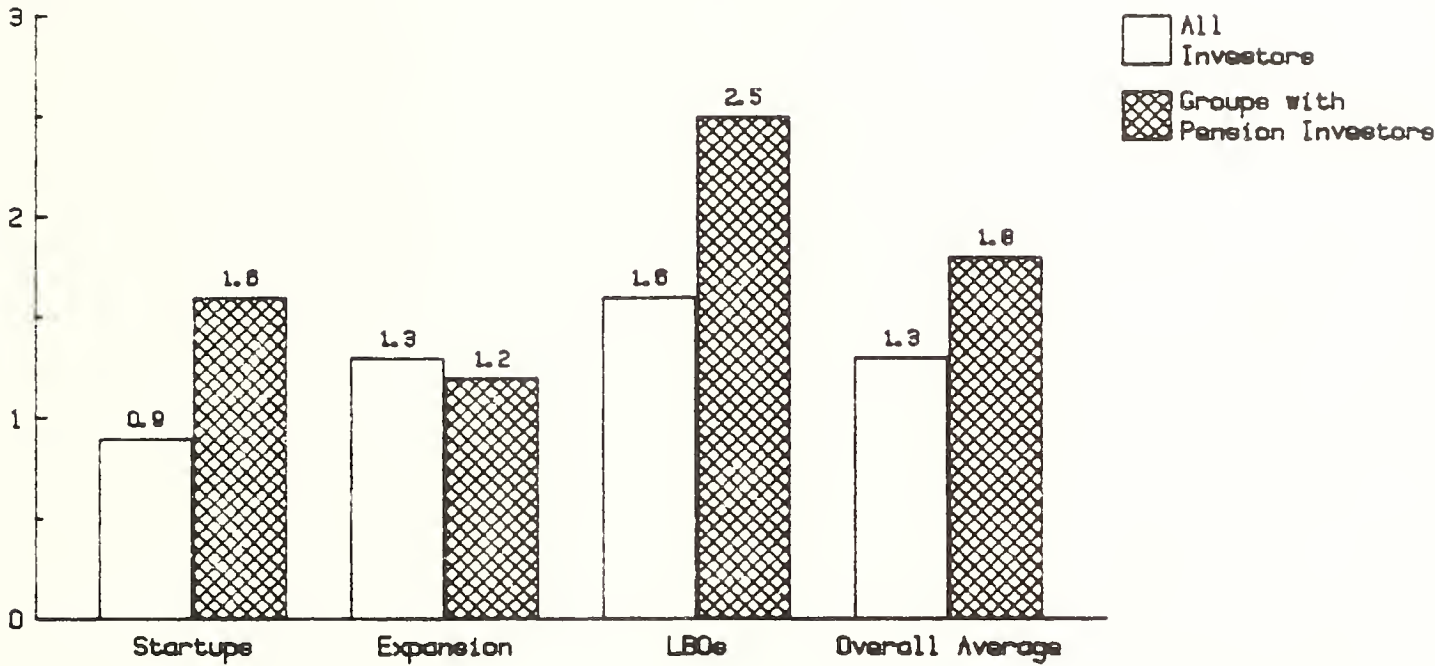
(It should be noted, however, that the working definition of venture capital for this project encompasses a small number of pension sponsored funds which provide term debt with equity participation to SMEs, mostly at the upper end of the \$35 million asset criterion. These investments tend to be larger than the "typical" venture capital deals and they have a stronger orientation towards LBOs.)



FIGURE 14

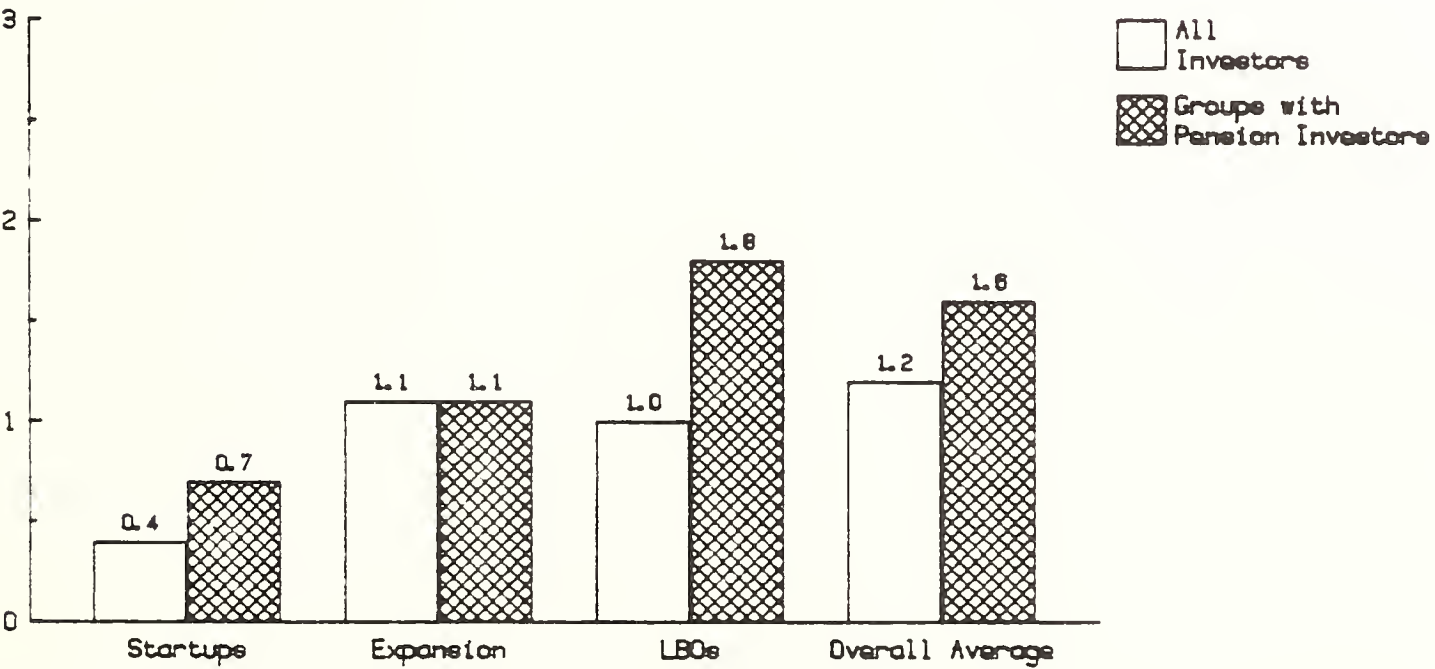
AVERAGE AMOUNT INVESTED IN CANADIAN COMPANIES  
1986

Dollars (millions)



Average Amount Invested  
in Ontario Companies  
1986

Dollars (millions)



### *5. Average Size of Financing: On the Rise*

Averages can be extremely risky in the context of venture capital. Some companies received venture financing of less than \$100,000 in 1986, while other investments involved several million dollars. Nevertheless, the average amount invested in Ontario-based companies rose from \$750,000 in 1981 to \$1.2 million in 1986. Similarly, the average amount invested in Canadian companies increased from \$650,000 to \$1.3 million over the same period.

The average amount invested per company is not synonymous with the average amount invested by an individual venture capital fund. As the capital required by companies at all stages increases, investors are increasingly syndicating their investments, or investing alongside other venture investors. If an investment requires a million dollars for example, it is quite likely that two or three investors will invest jointly. This not only reduces the capital commitment to an individual company, but it also allows investors to share the responsibility for managing their investments. In this way, a venture fund can participate in more investments than would otherwise be possible, thereby increasing the potential for diversification and reducing risk.

### *6. Industry Preferences: More Technology in Ontario*

While Canadian venture investors as a group, have a relatively diversified portfolio in terms of industry sector (see figure 15), there is a noticeably heavier concentration on technology based SMEs in Ontario than in the country as a whole. Pension-sponsored venture capital groups have a lower technology exposure in their Ontario investments, with a larger share of total capital going to industrial products firms.

While there has been a steady increase in the number of technology-based companies being financed by venture investors, the share of total capital invested going to such companies has remained relatively steady at around 45% - 50%. This is in contrast to the United States, where in excess of 80% of the total amount invested in recent years has gone to technology companies.

This difference in investment focus between the two countries is a function of a number of factors. First, attractive technology-based opportunities are perceived to be in much shorter supply here, on a relative basis, than in the U.S. The lack of critical mass of world class science and the limited number of research intensive technology corporations providing the market pull have limited the pool of technically strong management resources in this country. Second, many Canadian venture investors have no technology background themselves and therefore prefer to invest in traditional industry sectors. And third, many pension fund managers still see technology investing as *risky business* and will not invest in a venture fund with a technology focus.

As a result, venture investing in Canada has played a more limited role in contributing to the growth and development of innovative young technology firms. These factors are discussed in more detail below.

FIGURE 15

AGGREGATE VENTURE INVESTMENTS BY INDUSTRY  
1983-1986

(%)

Industry	<u>Cdn. SMEs</u> All Venture Investors	<u>Cdn. SMEs</u> Funds With Pension Funds	<u>Ont. SMEs</u> All Venture Investors	<u>Ont. SMEs</u> Funds With Pension Funds
Communications	7	6	5	1
Computer/Elect.	22	19	36	32
Genetic Engin'g	7	4	3	-
Medical Related	4	6	6	7
Energy Related	10	11	-	-
Consumer Related	18	22	24	21
Industrial Products	12	12	15	20
All other	21	20	11	19
	---	---	---	---
	100	100	100	100
Total Amount Invested	\$560 MM	\$355 MM	\$220 MM	\$153 MM

7. Factors Influencing the Demand For Capital

While a strong and growing base of capital is essential to support venture investments in SMEs, a strong and growing base of good investment opportunities is equally important if that capital is to be effectively deployed.

Is the SME sector in Ontario (and in Canada) likely to absorb a growing amount of capital for venture investing? Are there, or will they be, sufficient good quality investment opportunities to justify more active venture investing by Ontario's public sector pension funds?

The factors influencing the demand for venture capital and the quality of that



demand are much more difficult to pin down than those influencing the supply of capital. While hindsight allows for some inference based on recent trends, looking forward to anticipated demand is a much more difficult task.

Several observations can be made on the demand for venture capital as reflected by recent venture capital investment trends.

- The number of companies in Ontario and in Canada financing their growth with venture capital and the amount of capital being invested in these companies has been trending significantly upward over the past five years.
- Canadian venture capital investors have been reducing their foreign investments and investing an increasing share of their capital in Canadian companies.
- There has been a shift towards later stage financings in established companies, particularly as pension funds have become more active investors in independent venture capital funds.
- More technology based SMEs are financed in Ontario than in the rest of Canada, but Canadian venture portfolios have a much lower exposure to technology sectors than is the case in the United States.

### Investment Opportunities Increasing

The significant increase in the number of firms financed and the amount invested by Canadian venture investors in recent years is evidence that the demand for capital has responded to the growth in the supply of capital available for venture investing since the early 1980's.

Canadian investors have traditionally placed a significant portion of their capital in American growth companies. But as the amount invested by Canadian venture investors has increased, so too has the share going to Canadian companies increased. This leads us to the conclusion that in recent years, *Canadian venture capital managers have started to find more attractive investment opportunities in their own back yard.*

An assessment of demand for venture capital must go well beyond the number of small and medium sized enterprises in need of capital. A venture capital portfolio must be able to deliver above average returns to offset the inherent risks. Ad hoc investments in SMEs with only limited growth potential are likely to lead to returns which do not match those achievable through traditional, low risk securities. Since this outcome runs counter to the fiduciary responsibilities of public and private sector pension funds, it is difficult to argue for pension fund involvement in such investments.



Rather, it is those SMEs which have above average growth potential (and hence the potential to deliver above average returns) which have a legitimate place (as part of a diversified portfolio) in a pension fund investment strategy. At the same time, these SMEs are best positioned to deliver economic benefits associated with growth firms.

It is for this reason that the absolute number of companies financed is so small relative to the total universe of small and medium enterprises. Even in the United States, with the most sophisticated venture capital industry in the world, only about 1,500 firms have been financed per year in the past few years with the \$2.5 to \$3 billion being disbursed each year. Using the standard 1:10 ratio, the 157 Canadian firms securing venture financing in 1986 suggests the Canadian marketplace is now generating an equivalent number of good opportunities on a relative basis. On a dollar basis, \$206 million was disbursed by the Canadian venture capital industry in 1986 compared with \$2.9 billion in the U.S. The average venture capital investment is much larger in the U.S., explaining most of this differential.

The interviews conducted throughout this project confirmed that the entrepreneurial mentality has started to take hold in Canada. The rate of new business formations in Ontario alone has been on a sharp upward trend for the past 10 years, reaching more than 100,000 in 1986. In the words of one financial intermediary, "there has been a nursing factor for many of these companies. A growing number of businesses have survived the first five years and are now becoming real new companies - and candidates for venture financing."

The recession in the early 1980's and retrenchment which followed within many major corporations laid the foundation for a more entrepreneurial SME sector. Experienced middle managers found themselves without the corporate future they had expected - and many chose to apply their skills in a smaller company environment.

But what types of firms have been formed? The importance of SMEs not only in creating new jobs but in developing innovative new products and services was highlighted at the beginning of this report. Yet the aggregate portfolio analysis clearly demonstrates that while more technology-based SMEs are financed in Ontario than elsewhere in Canada, the venture capital industry is not yet playing the same catalytic role in the development of innovative technology firms as it has in the United States. Science, markets and management are the main contributing factors.

### (i) Science Push and Market Pull

The interaction in the U.S. between the government, corporate and university sectors has created a critical mass in technology, which has provided a base for private sector venture investing. Massive and sustained R&D expenditures at all three levels (particularly defence related expenditures) have linked into the market pull from technology-based multinationals to develop a strong base of young technology ventures. Many of these ventures in fact are spin-offs from the university, government and industrial labs.

The same is not true in Canada, as a recently released report from the Science Council of Canada points out.

In the United States, spin-offs are more common. Academic centres such as Stanford and MIT spawn high-technology companies, but the ranks of such companies are swelled by others that spin off from large industrial research laboratories. In the virtual absence of such industrial labs in Canada, the importance of university spin-offs is amplified.<sup>7</sup>

Federal and provincial governments have recently introduced an array of initiatives in an effort to harness the technology potential created in government and university labs and encourage the formation of new ventures to commercialize these technologies. The Ontario government has placed Commercial Development Officers on campus at major universities to facilitate the flow of technology from the lab to the marketplace.

While there is considerable innovative research being done in government and university laboratories in Canada, we have not had the benefit of sustained research support which has fuelled the science push in the United States. This science is the basis for technology development, and in turn, for technology-based venture investment activity.

The Canadian situation is compounded by the lack of pre-venture and early stage capital for technology developments. The impact of apparent preferences among many venture investors for later stage non-technology investments has limited the capital available to young Canadian technology companies, which has in turn, limited the opportunities available. Innovation Ontario is attempting to at least partially fill this gap.

The corporate sector plays an important role in this process as well. Most Canadian companies are not research intensive, so they do not serve as incubators for new entrepreneurial technology ventures. Furthermore, they do not pull technology from the SME sector, unlike many of their U.S. counterparts.

The process has gone a step further in the United States. In the past few years, many leading-edge multinationals, whose technology needs influence

innovative young firms, have launched aggressive corporate venture strategies to proactively seek out young technology companies of strategic interest. Companies like Xerox, 3M, Eli Lilly and Eastman Kodak have dedicated venture capital programs for this purpose. Investment decisions are driven by strategic and financial objectives, with preference being given to companies which can contribute to the corporation's business.

Clearly young companies financed by the Xerox's and Eli Lilly's of the world have a leg up in that they are immediately exposed to a potentially large market while at the same time gaining access to the invaluable expertise of the larger company's resources.

There are only a handful of such corporate venture initiatives in Canada. The (real or perceived) limited availability of technology opportunities in Canada has led one of these corporate venture groups to invest primarily in the United States. The others, while active, deliberately maintain a low profile. The net result is **an absence of technology pull from Canadian marketplace** which encourages technology-based innovative ventures.

#### **(ii) Management, Management, Management**

Perhaps the single most important factor influencing the rate at which capital will be invested is the availability of good management teams at the helm of innovative SMEs. While considerable emphasis is placed on technology edge, market potential and access to capital, the investment decision ultimately rests on an assessment of management. We have been told time and again by venture investors that they would much prefer to back a second rate product with first rate management than the other way around.

The structure of our economy has not, until recently, been conducive to the development of top flight entrepreneurial management, particularly in the technology sectors. As noted, many of the technology ventures in the U.S. have spun out from large research intensive companies. The technical resources spinning out with these venture are familiar with the corporate imperatives of management, market etc. Similarly, the on-going interaction between industry, government and universities imbues technical resources with some degree of the reality of the marketplace.

In the absence of these "corporate incubators" and firm cross-sector linkages, there appears to be more of a division in Canada between technical and management know-how. Many of the investors interviewed raise the lack of **management savvy as the single largest impediment to technology investing in Canada.**

The general consensus from our interviews with venture capital managers was that *the quality of investment opportunities has increased significantly in the past few years.* Entrepreneurs are becoming more sophisticated and are



packaging themselves and their products more effectively. As a result, they are gaining more support from the venture community. However, while the number of high quality opportunities is increasing, the process of growing the base of entrepreneurial talent is a lengthy one. Venture capital can play a critical role in helping to parlay that talent into commercial results. And the availability of venture capital unquestionably is an incentive to developing that talent in the first place.

The availability of experienced and capable venture capital managers who can access capital from pension funds and other investors and deploy it effectively in high quality SMEs is an equally important part of the process.

#### *8. Matching Supply and Demand: Availability of Experienced Venture Investors*

Since pension funds are likely to continue to invest through professionally managed venture capital funds, the availability of experienced venture managers will ultimately determine the amount of capital the system can effectively absorb.

A healthy supply of experienced professionals is crucial to accessing pension fund capital for venture investing. Although a number of factors (previously discussed) will influence a pension fund's decision to include venture investments in the portfolio, each individual investment decision will rest on the pension fund (or investment) manager's confidence in the venture capital manager's ability to deliver returns.

But there are still relatively few venture capital managers in Canada with sufficient history to demonstrate a credible and successful track record, making it difficult for pension managers to establish that confidence.

Venture investing is one of the last professional apprenticeship businesses. As the venture industry in Canada matures, more aspiring young venture capitalists will be trained. It is only through working with a venture fund through a full cycle, that a venture investor gets the training necessary in all aspects of the process to launch his own fund. It is in this way that the industry's human resources are augmented.

In the United States, new venture capitalists have been being trained since the mid-1950's when the Small Business Investment Corporation program was launched. But this process has only been underway in Canada since the early 1980's. As figure 16 illustrates, the number of professionals involved in the Canadian venture industry has grown substantially in the past three years, primarily as a result of new funds entering the industry. At the end of 1986, there were 160 venture capital professionals across the country (80% more than in 1983), 44 of whom had more than 10 years of experience.



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**FIGURE 16**  
**SUPPLY OF VENTURE CAPITAL PROFESSIONALS**  
**IN CANADA**

	Years of Venture Capital Experience				Total
	1-2	3-5	6-10	10+	
1983	26	18	20	25	89
1984	29	25	24	28	106
1985	27	30	27	37	121
1986	37	36	43	44	160

---

In 1986, almost one-quarter of all the professionals were new entrants to the industry and another one-quarter had less than five years experience. The experienced venture investors (most of whom have financial backgrounds) are hiring more technically trained young project managers (engineering, science, etc.), reflecting the need for technical assessment capabilities in a growing number of deals.

The size and composition of the professional ranks of venture investors not only determines the extent to which supply can be increased, but also impacts the demand by influencing the type and size of deals done. Almost all venture capital managers have seen recognized the need to proactively search out good investment opportunities. The industry is now large enough that no one can afford to be passive. But many, if not most, continue to concentrate on more mature opportunities.

The relatively low level of early stage investing by pension-sponsored venture groups is due in no small part to the relatively few investors with any significant early stage investment experience. There are really only two independent venture capital funds in Canada that claim to be oriented towards early stage investments - Helix Investments (Toronto) and Ventures West (Vancouver and Toronto).

In our view, the relatively constrained supply of experienced venture capitalists in Canada could well be the bottleneck in sustaining growth in the supply of capital for venture investing and ensuring the capital available is effectively deployed. The cultural differences between the pension investment community and the SME sector are sufficient to assume that direct linkages between the two are highly improbable to any significant extent. The availability of experienced and professional intermediaries is crucial to the flow of pension fund capital to emerging growth SMEs.

To ensure the stable development of future growth prospects, the venture capital industry itself should look for ways to encourage more extensive training opportunities in the venture industry.

With the strong growth in capital available for venture investing, pension funds and the venture industry itself are vulnerable to participation by unqualified individuals who are incapable of generating the necessary returns to sustain the industry's momentum and credibility. Unsatisfactory performance would be to detrimental to all parties involved.

#### **9. FUTURE DEMAND FOR VENTURE CAPITAL: SUPPLY WILL CONTINUE TO BE ABSORBED**

As we have shown, the availability of good investment opportunities in the SME sector in Ontario and in Canada as a whole has strengthened considerably. The amount of venture capital invested in the future will be a function of a continuation of this trend. The ability of the SME sector to absorb new capital will also be determined by the average size of financing, and the industry sectors and development stages on which venture managers focus. (Genetic engineering firms for example typically need large amounts of capital.)

To project the likely future demand, we examined the rate of growth in the total amount invested between 1981 and 1986. While 1981 was a peak year (\$121 million invested), a large portion was invested outside the country. In 1986, total investment was down from the previous year, but investment in Canadian SMEs was up. The average annual growth rate over this five year period was 15%.

A 15% annual increase in disbursements over this period would result in annual investments of \$490 million in 1991 (compared with \$244 million in 1986, of which \$206 million went to Canadian SMEs). This growth would represent a doubling of investment levels over a five year period. The total amount invested between 1987 and 1991 under these conditions would be \$1.9 billion.

If 90% of the capital is captured by Canadian firms, and Ontario SMEs continue to account for about 40% of Canadian disbursements, the projected investment level in 1991 would translate into disbursements to Ontario SMEs of about \$175

million. If the average size of investment remains constant (and it is more likely to increase) this would translate into 146 Ontario-based SMEs securing venture financing in 1991. Over the five year period, these assumptions would result in disbursements of \$680 million to 560 Ontario high growth SMEs.

In our view, this projected rate of growth in demand is reasonable if not conservative. As we have demonstrated, the supply of venture capital stimulates demand and the fundamentals are in place for continued strong growth in the supply of capital: the regulatory environment is becoming more conducive to venture investing; liquidity has improved significantly; more pension funds are making venture investments; the base of experienced venture capital managers is growing; and venture investors are helping to ease uninitiated pension funds into the market with more conservative venture investment strategies.

In the short term, there could well be some crowding at the top end of the market (with insufficiently high quality competitively priced opportunities in more mature SMEs) and there will likely continue to be a gap at the bottom end for earlier stage financings. But we believe the market will find its own equilibrium as capital is forced to move to other segments of the market which offer more competitive pricing and hence opportunities. A major constraint on the ability of SMEs to access new capital will be the availability of experienced venture capital managers to effectively link pension fund capital with high growth SMEs.

In short, we expect the demand for venture capital to readily accommodate continued and expanded investments in venture capital funds by Ontario's public sector pension funds, including the TSF and the PSSF if they are moved into marketable securities. In fact, increased capital commitments by these funds will, in all likelihood, stimulate demand even further, (as the rapid growth in the capital base in the U.S. since the early 1980s has done) particularly if the performance documented in the following chapter is sustained.



#### *IV. REALIZING THE GAINS: PERFORMANCE OF VENTURE INVESTMENTS*

As noted at the outset of the report, there are three equally important components to the venture capital process - committing the capital, deploying it effectively and realizing the gains. The gains are critical if venture capital investments are to be considered prudent investments for public and private sector pension funds.

There is no question that the risk associated with venture investments is higher than that of traditional investments. The costs associated with the transactions are also higher. And liquidity is much more constrained. But sound investment principles dictate that the risks and the costs of an individual investment be viewed in the context of the potential returns and the impact on the total portfolio. Pension fund managers must therefore ask if venture investments can deliver competitive returns on a risk adjusted basis and contribute to the performance of the portfolio. This question can be addressed in both theoretical and practical terms.

Looking first at the theoretical analysis, Keith Ambachtsheer has recently shown that a properly diversified venture portfolio which conforms to average portfolio behaviour has virtually no risk of losing money and a strong probability of achieving above average returns.<sup>8</sup> In a diversified venture portfolio of ten investments, experience suggests that two are likely to do poorly, six will be modest performers at best, and two will perform extremely well and carry the whole portfolio. Based on this experience, Ambachtsheer made the following assumptions for his analysis.

1. Every investment made is disposed of for cash at the end of a six year holding period.
2. Every investment has a 20% chance of earning 25% per year over the holding period; a 60% chance of earning 10% per year, and a 20% chance of earning an annual return of 60%. The 10% return is assumed to be the equivalent of a risk free rate; the 60% return on the two successes is the rate required to produce a 25% return on the portfolio as a whole - the generally accepted target for pension funds.
3. Investment outcomes are independent of one another.

Using these assumptions, Ambachtsheer set out to examine (i) the range of returns likely if the capital committed to venture investments is spread across more than one investment; and (ii) the impact on total pension fund risk. Two simulations were run; the first assuming an investment in one venture capital pool which makes ten investments, with the outcome characteristics noted above; and the second assuming the investment is spread evenly over three separate pools, each making ten investments, or a portfolio of thirty venture investments.



The simulations were run on the basis of 1000 investors allocating their capital into different pools making investments compatible with the assumptions. The range of returns likely for each \$1 invested in a single investment, a pool with 10 investments, and three pools with 10 investments are presented in Figure 17 below.

As the numbers demonstrate, participating in a pool with 30 investments (with the assumed characteristics) has virtually no risk for a pension fund, in that the probability of losing money on the investment is nil. The chances of a return of less than 10% (a risk free rate) are one in a hundred. On the other hand, *there is a 90% chance that this pool of venture investments will generate an annual return of more than 20%.* Even a pool with only 10 investments has a 70% chance of returning more than 20% per year. A single investment on the other hand has only a 20% chance of returning more than 10%. Since the probability of achieving a rate of return well above the risk free rate increases with increased diversification (given the assumptions), Ambachtsheer concludes *these six year risk-return characteristics are vastly superior to those facing the typical pension plan at the total fund level.*

Theoretically, a diversified venture investment strategy appears to be prudent and is likely to make a contribution to total portfolio performance, assuming that the venture portfolios in fact deliver on the 2-6-2 assumptions; and that there is a sufficient number of venture capital funds (and investment opportunities) to support the assumption of independent outcomes.

FIGURE 17

POSSIBLE OUTCOMES FOR VENTURE INVESTMENT PROGRAMS

Value of \$1 in 6 years	Equivalent Annual ROR	Cumulative probabilities of exceeding a given rate of return for a		
		Single Investment	Pool of 10 Investments	Pool of 30 Investments
\$0.00	-100%	100%	100%	100%
\$0.18	-25%	80%	100%	100%
\$1.00	0%	80%	100%	100%
\$1.77	10%	80%	92%	99%
\$2.00	12%	20%	90%	98%
\$3.00	20%	20%	71%	90%
\$4.00	26%	20%	62%	60%
\$5.00	31%	20%	33%	27%
\$6.00	35%	20%	21%	10%
\$7.00	38%	20%	11%	3%
\$8.00	41%	20%	4%	1%
\$9.00	44%	20%	3%	0%
\$10.00	46%	20%	2%	0%
\$11.00	48%	20%	1%	0%
\$12.00	50%	20%	0%	0%
**	**	**	**	**
**	**	**	**	**
\$16.77	60%	20%	0%	0%
\$17.00	61%	0%	0%	0%

Source: K. Ambachtsheer; November 1985.

### *Theory Versus Reality*

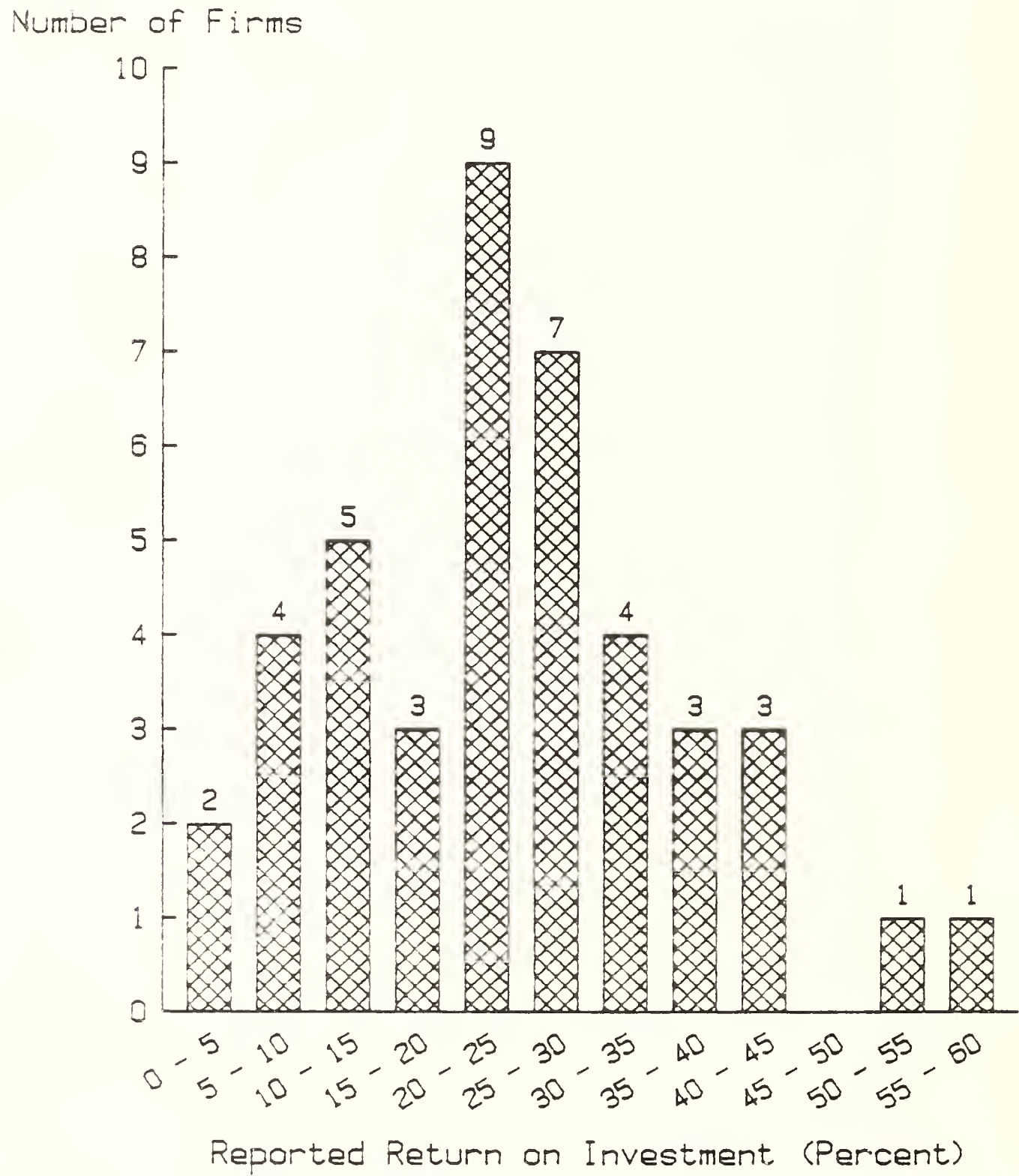
How does theory compare with reality? The Canadian venture industry is still relatively young, which presents some difficulties in attempting to quantify risk adjusted rates of return on venture portfolios.

Performance data on venture funds is better developed in the United States since the industry is more developed in that country. Research by Venture Economics Inc. on the reported returns of 42 venture capital firms in the United States in existence for five years or more demonstrated a median return of 25% (prior to management incentives.) Of the 42 firms analysed, 70% generated returns greater than 20% per annum, as illustrated by figure 18, suggesting the distributions resulting from Ambachtsheer's analysis represent a reasonable approximation of reality, at least in the United States.

A recent analysis by Morgan Stanley concluded that "if you have the patience and staying power, nothing comes anywhere close to the returns on venture capital."<sup>9</sup> Although this research was intended to represent orders of magnitude rather than precise returns, it suggests that the real performance of venture capital investments has far outstripped that of more traditional investments, (as illustrated by figure 19). While it is difficult to quantify the costs and risks associated with venture investments, the differentials shown in the Morgan Stanley analysis suggest that venture investments have outstripped conventional investments on a risk-adjusted basis as well.

FIGURE 18

REPORTED RETURN ON INVESTMENT FOR 42 VENTURE CAPITAL FIRMS IN  
EXISTENCE FIVE YEARS OR MORE





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FIGURE 19

MORGAN STANLEY ANALYSIS  
OF COMPARATIVE RATES OF RETURN  
AVERAGE RETURN ON ASSETS

	Nominal Annual Rate of Return	Standard Deviation	Real Annual Rate of Return
Short term Investments	3.7	2.9	1.6
U.S. Common Stocks	10.1	17.0	8.1
Emerging Growth Stocks	15.3	29.3	8.8
Venture Capital	27.1	-	19.6
Bonds	4.5	8.5	2.4
Foreign Common Stocks	10.9	16.2	6.1
Real Estate	7.7	7.7	5.7
Gold	6.0	-	3.0

Source: Morgan Stanley;1986.

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The supply analysis presented in chapter II showed that almost 75% of the venture capital base in Canada has been committed in the last five years. Evaluating the performance of a venture portfolio in its early stages can be highly misleading, in that bad investments are likely to surface early while good investments take longer to grow and mature. The true returns on a venture portfolio cannot be calculated until the fund has been liquidated and the gains returned to the investors; but the performance patterns will usually start to emerge after five years. However, most of the venture funds in Canada are too young to allow for a reliable assessment of the performance of the portfolio. There is no big board to tell the investors the value of their investments at any one time. And an unrealized gain is not really worth much more than an unrealized loss.

As an interim step towards developing reliable performance data on Canadian venture funds, we have analysed the returns achieved by Canadian venture investors on all investments which they disposed of between 1975 and 1985.

From the investor's perspective, a venture investment is made with the express intention of realizing a capital gain on that investment within a given time frame. While recognizing that the liquidity of the investment will be limited during the intervening period, considerable attention will be given *before the investment is made* to the options for liquidating, or exiting, down the road.

There are several mechanisms which can be used for exiting from venture investments, including

- initial public offering (IPO);
- acquisition of investee company by another firm;
- repurchase of the investor's position by the investee company or its management;
- secondary purchase, or purchase of the investor's position by a third party; or
- writing the investment off.

While writeoffs are clearly not a desirable mechanism for exiting, they are nevertheless a reality of venture investing.

The returns analysis is based on all exits made by 22 Canadian venture investors between 1975 and 1985, which generated a sample of 167 transactions. It must be recognized that the results of the analysis are based on individual transactions and are not synonymous with total portfolio performance. Unlike the U.S., where many partnerships have completed their life cycle, providing the basis for calculating returns, few Canadian venture funds have completed a full cycle. As long as a portfolio is still active, it is not possible to calculate the realized returns on the initial capital investments.

It should also be recognized that the demographics of the venture industry in Canada influenced the sample of exit transactions. There is an adage in the venture industry ... lemons ripen quickly while pearls take time to cultivate. A venture fund can therefore expect to realize most of its losses within the first three years of operations, while the most significant gains could take five to ten years to materialize. Given the large number of relatively young funds in Canada, the number of writeoffs in the sample of exit transactions was disproportionally high - accounting for one third of the total. Many of the potential "big hits" are still in the portfolio.

Yet despite this, *the average internal rate of return on all exits over the 10 year period was 23%*. Canadian venture investors have clearly realized significant gains on many of their investments. Since these returns are based on exits made over the ten year period, (rather than on portfolio performance over that period) it is difficult to compare these returns with data on more conventional investments.

However, the TSE 300 index increased by an average annual compound rate of 16.75% between 1975 and 1985 (including income and gains) and the average annual yield on three month Treasury Bills (representing a risk free investment) was 11.8%. Recognizing that the performance data on venture exits is not fully comparable, it does appear that there has been a significant premium on venture investments to compensate for risk and limited liquidity.

This research, which is summarized in figure 20, has led to several important observations and conclusions.

- A small number of highly profitable investments can produce a superior rate of return on the portfolio overall. Only 15% of the sample generated annual returns of more than 50%, yet these investments played a critical role in producing an average annual return of 23% across the sample.
- The liquidity of Canadian venture investments is improving, as evidenced by a steady increase in the number of dispositions since 1981. The ratio of exits and new investments is approaching unity, which is a sign of the growing maturity of the venture industry. This liquidity is critical to attracting investors to venture investments in the first place.
- The most frequently used exit mechanism has been the repurchase of the venture investor's position by the investee firm. Exits made through repurchases yielded a compounded annual rate of return of 44%. Even after a downward adjustment for one distorting repurchase transaction, the average return on exits made using this mechanism was 31%. This strong performance suggests that investors are not selling their positions back to the investee firms because of a lack of other options. Instead it would appear that the terms of the repurchases have been structured into the deals at the outset, thereby giving the investors more liquidity from the start.
- Initial public offerings brought investors the largest returns. The 26 investments liquidated through an IPO yielded investors an annual internal rate of return of 197%. The Quebec Stock Savings Plan has made an important contribution to the liquidity of venture investments in Quebec, allowing venture investors to take their successful portfolio companies public more readily. Although all the Canadian stock exchanges have been taking steps to make the public markets more accessible, the public markets have historically not been a viable source of equity capital for smaller companies in Canada. The research suggests that this situation is beginning to change (as we will discuss in a subsequent section) which adds a new dimension of liquidity to venture investments.
- The average holding period for all venture investments in the sample was 4.3 years. As would be expected, the holding period for earlier stage investments was longer than for expansion and LBO financings.



- The highest returns (28% and 29% annually) were achieved on technology-based investments in the communications, computer and electronics sectors. These sectors also accounted for a high share of the writeoffs. These results reinforce the need for diversification in a venture portfolio. They also provide evidence that many higher risk investments have in fact yielded superior rates of return.
- The estimated return on exits by Canadian venture investors from investments in U.S. companies was 23% compared to a return of 24% on exits from investments in Canadian companies. This performance dispels the widely held notion that investment opportunities available to Canadian investors in the United States are de facto, superior to those available in Canada.
- Slightly more than half of all the exits in the sample (85 exits) were made by venture groups with pension fund investors. These exits yielded an average annual return of 25.7% - outperforming the sample as a whole.

The results of this research demonstrate that Canadian venture investors have, in fact, been successful in realizing significant, above average returns on many of their investments. Furthermore, it provides new and unique evidence to Canadian pension fund managers that *venture investments constitute a viable investment option and that they can contribute to portfolio performance* and enhance the overall risk-return characteristics of the fund. They are therefore compatible with pension investment objectives and *do not involve concessions with respect to performance or fiduciary responsibility.*

While the performance analysis has been oriented towards the returns to investors, it is important to recognize that to be successful, venture investing must be a mutually beneficial process. Venture capitalists have, on occasion, been charged to be vulturesome rather than venturesome. However, in most instances, an investor is unlikely to achieve a good return on his investment if the company itself has not moved considerably forward on its growth path. A profitable public offering, acquisition or repurchase are unlikely if there has not been a significant increase in value, which obviously benefits the investee firm and its management as well as the venture investor. The returns evidenced by the research suggest that many venture-backed firms have achieved significant growth with the assistance of the venture capital process.



FIGURE 20

EXITING FROM VENTURE INVESTMENTS:  
THE CANADIAN EXPERIENCE

Exit Vehicle	Exits		Average Investment (\$000s)	Average Holding Period (years)	Average IRR (%)
	#	%			
IPO's	26	16	999	2.3	197
Acquisitions	29	17	700	4.1	21
Repurchase	37	22	453	5.7	44
Reverse	1	1	-	-	-
Writeoffs	53	32	613*	3.4	-
Other	17	10	421	5.5	-
Unknown	4	2	-	-	-
Total	167	100	647	4.3	23

The superior returns on venture investments are achievable because the opportunity for returns is greater in the non-efficient segment of the capital market ... and this segment is the domain of venture investing.

The conventional arguments by many pension funds against venture investing ... too risky ... too expensive ... and not sufficiently profitable ... appear to be based more in perception than fact. There is clearly a need for a better understanding by pension funds of the dynamics of venture investing and its performance. While we firmly believe that the expectation of performance should be the critical factor in a pension fund's decision to invest in a venture fund, we would expect the supply of capital to continue to increase, as this awareness and understanding grow, and performance is demonstrated.

The potential for superior performance is the basis on which continued and increased investments by Ontario's public sector pension funds (including the PSSF and the TSF) should be considered.

## *V CONCLUSIONS AND RECOMMENDATIONS*

The analysis presented in this report, which was driven by the five objectives established at the outset of the project (see page 2), is the basis for the conclusions and recommendations outlined below.

### *1. Conclusions*

#### *(i) Role of SMEs in Creating New Activity*

■ SMEs have demonstrated their prominence as the generators of new jobs.

■ SMEs play a critical role in the innovation process in that they produce more new products and processes and do so more quickly and less expensively than do their larger corporate counterparts.

■ Small and medium sized companies have become the engine of economic growth in all industrialized countries.

#### *(ii) Venture Investments By Ontario's Public Sector Pension Funds*

■ While the level of investment activity varies significantly among them, Ontario's public sector pension funds, as a group, are investing in venture capital funds at the same rate, relative to assets, as their private sector counterparts. Between 1981 and 1986, the public sector funds invested \$60 million in independent venture capital funds, or 0.2% of their assets.

■ Venture investments by all Ontario-based pension funds (public and private) as a share of all pension fund investments is equal to the share which they represent of all Canadian pension assets.

■ Canadian pension funds, as a group, accounted for 58% of all new capital committed to independent venture capital funds over the past five years, highlighting the importance of pension funds in general as a source of capital for venture investing.

■ Independent venture capital funds are becoming a dominant force in the venture capital market, primarily because of the significant increase in investments by public and private sector pension funds in these professionally managed funds.

■ Independent venture capital firms with pension fund investors (public and private) have invested more heavily in expansion financings and LBO's than the industry as a whole, and have committed a smaller share of capital (and financings) to early stage companies.

■ Venture capital is not playing the same catalytic role in Canada as it has in the States with innovative young technology firms. While the share of capital invested going to technology firms is higher in Ontario than elsewhere in Canada, it is still significantly lower than in the U.S.

■ The total supply of capital for venture investing by corporate, crown and independent venture capital funds has grown at a strong and steady rate in recent years. The total stock of capital committed for venture investing has increased significantly over the past five years, and stood at about \$1.6 billion at the end of 1986.

■ Since pension funds are the single largest source of capital in the country, links between them and the high growth segment of the SME sector will play a critical role in ensuring the growth of significant and strong companies.

### *(iii) Factors Influencing Pension Fund Decision to Invest*

■ The variance in the level of venture investing among Ontario's largest public sector pension funds is primarily a function of management attitudes. Venture investments are non-traditional investments, and have different risk/reward characteristics than traditional investments. Pension fund managers and investment committees have significantly different attitudes towards non-traditional investments, which are reflected in their investment policies.

■ Large in-house managed funds are more likely to make venture investments than smaller funds or funds using outside managers, primarily because they can develop the experience to assess venture investment opportunities and the assets are of sufficient size to allow for meaningful diversification into non-traditional investments.

■ The regulatory environment guiding pension fund investing in Canada, and in Ontario, has, until very recently, implicitly discouraged venture investing by pension funds. New federal regulations and the introduction of the prudent person approach in Ontario together will create an environment more conducive to venture investing by Ontario's public and private pension funds.

■ Most external investment managers have had little interest in venture investing, primarily because of limited liquidity, and its implications for quarterly performance measurement, the double fee issue and the perceived "hassle quotient."



#### *(iv) Venture Investments and Portfolio Performance*

■ Annual disbursements by the organized venture capital community to Canadian SMEs are currently running at \$200 - \$250 million, up substantially from the early 1980's. About 50% of these disbursements are made by independent venture capital funds in which pension funds invest.

■ Despite the growth in investment activity, the Canadian venture capital industry is still too young to develop any realistic measures of performance for the industry as a whole. However, venture capital managers have performed well overall on investments divested between 1975 and 1985, achieving an overall annual rate of return on these investments of 23%. The TSE Index and three month Treasury Bills yielded 16.75% and 11.8% respectively over the same period suggesting venture investments are returning a significant premium to offset risk, liquidity limitations and higher transaction costs.

■ Future performance will be largely determined by the availability of good investment opportunities for the new capital committed for venture investing. The increased supply of capital in recent years appears to have stimulated demand among high growth SMEs for venture capital, which has led to an increase in the quality and quantity of investment opportunities in Canadian SMEs.

■ Although pension funds have a responsibility, first and foremost to their beneficiaries, a properly developed and managed venture capital portfolio can achieve superior rates of return thereby contributing to a pension fund's efforts to serve this responsibility. Pension funds therefore have the opportunity to contribute directly to economic activity without abdicating their fiduciary responsibilities.

## *2. Recommendations*

Given the considerable momentum has developed in the venture capital market in recent years, government policy pertaining to venture investing by public sector pension funds should be constructed to encourage this momentum without distorting it. In other words *policy measures should be supportive rather than interventionist.*

OMERS has already assumed an active investment stance in the venture capital market and Hydro and HOOP have recently become involved. A core group of private sector, Crown Corporation and public sector funds outside Ontario have been key investors in independent venture capital funds.

We expect that the preference of many pension sponsored venture groups for investments in venture capital funds with an investment focus towards more mature SMEs will persist in the short term, and believe there is a role for



government initiatives to fill the gap for smaller amounts of early stage capital.

Given the nature of the "pension deal" with the various public sector funds, the government can really only influence investment policy in the case of the Teachers and Public Service pension funds, where it has a direct role as employer. If the TSF and PSSF are moved into the market, participation in the venture capital market would be consistent with their fiduciary responsibilities and financial objectives, and would directly contribute to new economic activity in the process.

We therefore make the following recommendations.

(i) The government should not mandate public sector funds to meet certain venture investment strategies.

(ii) If the TSF and PSSF are moved into the market, the government should ensure there are no statutory (or policy) impediments to venture investing.

(iii) If the TSF and PSSF are moved into the market, the government, as employer, could have a right to participate in the development of investment policy, depending on the final nature of the "pension deal." If it does have this right, it should attempt to ensure that the management committees of these funds build the necessary expertise to participate in the venture capital market through carefully selected investments with professional venture capital managers. This is not intended to suggest that the funds be mandated to participate in any way. But given the demonstrated importance of management attitudes on the inclusion of venture investments as an asset class, an effort should be made to ensure these funds are equipped to respond to good investment opportunities that will ultimately be of benefit to the fund while directly contributing to new economic activity.

### *3. Alternatives to Mandating: Broader Recommendations.*

There are a number of additional measures, beyond those pertaining directly to the public sector pension funds which can be taken to further enhance the venture capital process in Ontario.

(i) The venture capital industry, with support from appropriate ministries (perhaps MITT and Treasury) should enhance the understanding of the venture capital process and its potential to contribute to financial performance among public and private pension funds, and the investment management

community through a well designed, long term communication strategy.

(ii) The government should examine the costs and benefits of an Ontario equivalent to the Quebec Stock Saving Plan, which would further enhance the liquidity of venture investments while developing a broader awareness of the benefits of share ownership.

(iii) The venture capital industry itself should develop a strategy to increase the number of professionals being "apprenticed" to ensure the supply of experienced venture capital managers (particularly those with technical expertise), does not prove to be a bottleneck to further growth in the venture capital commitments of Ontario's public sector pension funds.

(iv) The provincial ministries with responsibility for policies affecting SMEs, and particularly young technology ventures (including for example MITT, Colleges and Universities, Skills Development) should establish a working group with representatives from the venture capital community to examine policy options to further stimulate entrepreneurial ventures and young technology firms.

(v) Officials from MITT and Treasury should determine what mechanisms might be used to gain more leverage from the government infrastructure of investment advisors, lenders, etc., in the regions, to establish stronger links between entrepreneurial activity in the regions and the organized pools of venture capital in the urban centres.

*A properly developed, implemented and managed venture investment strategy can be beneficial to the performance of Ontario's public sector pension funds, and all other pension funds, while at the same time making capital available to the growth oriented SMEs that are now the mainstay of our economy.*

*Such a strategy can simultaneously "serve the needs of pension fund beneficiaries and advance the province's economic development."*

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## **APPENDIX**

### **STATISTICAL TABLES**



TABLE A1

NUMBER OF CANADIAN COMPANIES FINANCED BY STAGE  
(%)

COMPANY'S STAGE	1986	1985	1984	1983	1982	1981
Seed/Startup	21	35	43	23	12	25
Other Early	9	6	6	13	40	12
Expansion	38	40	38	30	21	35
LBO	9	10	7	16	7	4
Turnaround	4	6	4	8	19	6
Other	15	3	3	8	0	13
Unknown	4	0	0	2	1	4
	...	...	...	...	...	...
TOTAL	100	100	100	100	100	100
NUMBER OF COMPANIES FINANCED	157	150	72	61	73	99

TABLE A2

DISTRIBUTION OF AMOUNT INVESTED  
IN CANADIAN COMPANIES BY STAGE  
(%)

COMPANY'S STAGE	1986	1985	1984	1983	1982	1981
Seed/Startup	15	22	27	28	10	30
Other Early	3	2	5	6	35	28
Expansion	38	41	44	19	38	28
LBO	11	21	14	33	5	5
Turnaround	6	5	9	5	13	5
Other	26	10	1	8	0	0
Unknown	1	0	0	0	0	5
	---	---	---	---	---	---
TOTAL	100	100	100	100	100	100
TOTAL AMOUNT INVESTED (\$ MILLIONS)	208	189	85	78	40	64



TABLE A3

AVERAGE AMOUNT INVESTED IN CANADIAN COMPANIES  
(\$ Millions)

COMPANY'S STAGE	1986	1985	1984	1983	1982	1981
Seed/Startup	0.94	0.79	0.74	1.57	0.44	0.76
Other Early	0.43	0.44	1.00	0.63	0.48	1.50
Expansion	1.32	1.30	1.37	0.83	1.00	0.51
LBO	1.64	2.60	2.40	2.60	0.40	0.75
Turnaround	1.86	1.00	2.67	0.80	0.36	0.50
Other	2.39	3.60	0.50	1.20	-	-
OVERALL AVERAGE	1.32	1.26	1.18	1.28	0.55	0.65

TABLE A4

NUMBER OF ONTARIO COMPANIES FINANCED BY STAGE  
(%)

COMPANY'S STAGE	1986	1985	1984	1983
Seed/Startup	18	38	40	11
Other Early	8	0	7	14
Expansion	38	30	43	26
LBO	9	16	5	29
Turnaround	6	14	2	6
Other	17	2	2	11
Unknown	5	0	0	3
	...	...	...	...
TOTAL	100	100	100	100
NUMBER OF COMPANIES FINANCED	66	50	42	35

TABLE A5

DISTRIBUTION OF AMOUNT INVESTED  
IN ONTARIO COMPANIES BY STAGE  
(%)

COMPANY'S STAGE	1986	1985	1984	1983
Seed/Startup	6	26	50	3
Other Early	3	2	11	11
Expansion	36	42	16	22
LBO	8	20	21	54
Turnaround	13	11	3	8
Other	35	0	0	3
Unknown	0	0	0	0
	---	---	---	---
TOTAL	100	100	100	100
TOTAL AMOUNT INVESTED (\$MILLIONS)	80	65	38	37

TABLE A6

AVERAGE AMOUNT INVESTED IN ONTARIO COMPANIES  
(\$ Millions)

COMPANY'S STAGE	1986	1985	1984	1983
Seed/Startup	0.42	0.89	1.12	0.25
Other Early	0.40	-	-	-
Expansion	1.16	1.80	0.33	0.89
LBO	1.00	1.63	-	2.00
Turnaround	2.50	1.00	1.00	1.50
Other	2.55	-	-	0.25
OVERALL AVERAGE	1.21	1.30	0.90	1.06



TABLE A7

NUMBER OF CANADIAN COMPANIES FINANCED  
BY GROUPS WITH PENSION INVESTORS  
(%)

COMPANY'S STAGE	1986	1985	1984	1983
Seed/Startup	12	22	31	18
Other Early	7	5	10	18
Expansion	33	48	34	23
LBO	16	17	17	28
Turnaround	5	6	0	5
Other	17	2	7	10
Unknown	9	0	0	0
	---	---	---	---
TOTAL	100	100	100	100
NUMBER OF COMPANIES FINANCED	75	64	29	40

TABLE A8

DISTRIBUTION OF AMOUNT INVESTED IN CANADIAN  
COMPANIES BY GROUPS WITH PENSION INVESTORS  
(%)

COMPANY'S STAGE	1986	1985	1984	1983
Seed/Startup	11	11	19	6
Other Early	2	1	17	11
Expansion	24	33	48	8
LBO	23	44	14	70
Turnaround	9	9	0	2
Other	31	1	2	0
Unknown	1	0	0	3
	...	...	...	...
TOTAL	100	100	100	100
TOTAL AMOUNT INVESTED (\$ MILLIONS)	133	97	42	63

TABLE A9

AVERAGE AMOUNT INVESTED IN CDN COMPANIES  
BY GROUPS WITH PENSION INVESTORS  
(\$ Millions)

COMPANY'S STAGE	1986	1985	1984	1983
Seed/Startup	1.67	0.79	0.89	0.57
Other Early	0.40	-	-	-
Expansion	1.28	1.03	2.00	0.56
LBO	2.50	3.91	-	4.00
Turnaround	3.00	2.25	-	0.50
Other	3.15	-	-	-
OVERALL AVERAGE	1.77	1.52	1.45	1.58

TABLE A10

NUMBER OF ONTARIO COMPANIES FINANCED  
BY GROUPS WITH PENSION INVESTORS  
(%)

COMPANY'S STAGE	1986	1985	1984	1983
Seed/Startup	7	21	33	9
Other Early	5	7	20	23
Expansion	46	50	33	23
LBO	10	14	13	32
Turnaround	7	7	0	0
Other	15	0	0	14
Unknown	10	0	0	0
	---	---	---	---
TOTAL	100	100	100	100
NUMBER OF COMPANIES FINANCED	41	28	15	22



TABLE A11

DISTRIBUTION OF AMOUNT INVESTED IN ONTARIO  
COMPANIES BY GROUPS WITH PENSION INVESTORS  
(%)

COMPANY'S STAGE	1986	1985	1984	1983
Seed/Startup	3	17	25	5
Other Early	1	2	44	23
Expansion	31	44	6	14
LBO	10	27	19	55
Turnaround	16	10	0	0
Other	36	0	6	5
Unknown	1	0	0	0
	---	---	---	---
TOTAL	100	100	100	100
TOTAL AMOUNT INVESTED (\$ MILLIONS)	67	48	16	22

TABLE A12

AVERAGE AMOUNT INVESTED IN ONTARIO COMPANIES BY GROUPS WITH PENSION INVESTORS (\$ millions)				
COMPANY'S STAGE	1986	1985	1984	1983
Seed/Startup	0.67	1.33	0.80	0.50
Other Early	0.50	-	-	-
Expansion	1.11	1.50	0.20	0.60
LBO	1.75	3.25	-	1.71
Turnaround	3.67	2.50	-	-
Other	4.00	-	-	0.33
OVERALL AVERAGE	1.63	1.71	1.07	1.00

TABLE A13

NUMBER OF CANADIAN  
COMPANIES FINANCED BY INDUSTRY  
(%)

INDUSTRY	1986	1985	1984	1983
Communications	7	7	11	12
Computer Related	18	16	17	19
Other Electronics	5	9	7	8
Genetic Engineering	3	4	6	0
Medical/Health Related	4	5	1	2
Energy Related	9	7	6	12
Consumer Related	14	12	16	17
Industrial Products	14	14	11	10
Industrial Automation	5	5	1	0
All Other	22	20	23	20
	....	....	....	....
TOTAL	100	100	100	100
NUMBER OF COMPANIES FINANCED	152	146	70	59

TABLE A14

DISTRIBUTION OF AMOUNT INVESTED  
IN CANADIAN COMPANIES BY INDUSTRY  
(%)

INDUSTRY	1986	1985	1984	1983
Communications	5	8	9	5
Computer Related	12	14	13	13
Other Electronics	7	10	5	12
Genetic Engineering	9	9	5	0
Medical/Health Related	6	4	1	1
Energy Related	6	12	11	15
Consumer Related	14	18	14	33
Industrial Products	14	8	13	5
Industrial Automation	1	2	2	0
All Other	27	14	27	15
	---	---	---	---
TOTAL	100	100	100	100
TOTAL AMOUNT INVESTED (\$ MILLIONS)	206	189	85	78



TABLE A15

AVERAGE AMOUNT INVESTED IN  
CANADIAN COMPANIES BY INDUSTRY  
(\$ MILLIONS)

INDUSTRY	1986	1985	1984	1983
Communications	1.10	1.50	1.00	0.57
Computer Related	0.86	1.13	0.92	0.91
Other Electronics	2.14	1.46	0.80	1.80
Genetic Engineering	4.50	2.83	1.00	-
Medical/Health Related	2.00	1.00	1.00	1.00
Energy Related	0.86	2.30	2.25	1.71
Consumer Related	1.33	1.89	1.09	2.60
Industrial Products	1.33	0.76	1.38	0.67
Industrial Automation	0.29	0.43	2.00	-
All Other	1.65	0.93	1.44	1.00
TOTAL	1.36	1.29	1.21	1.32

TABLE A16

NUMBER OF ONTARIO COMPANIES  
FINANCED BY INDUSTRY  
(%)

INDUSTRY	1986	1985	1984	1983
Communications	9	3	12	16
Computer Related	26	19	18	19
Other Electronics	5	9	9	10
Genetic Engineering	2	6	6	0
Medical/Health Related	5	11	3	3
Energy Related	0	1	0	0
Consumer Related	17	13	15	13
Industrial Products	10	16	9	16
Industrial Automation	7	6	3	0
All Other	19	17	24	23
	...	...	...	...
TOTAL	100	100	100	100
NUMBER OF COMPANIES FINANCED	58	70	33	31

TABLE A17

DISTRIBUTION OF AMOUNT INVESTED  
IN ONTARIO COMPANIES BY INDUSTRY  
(%)

INDUSTRY	1986	1985	1984	1983
Communications	7	2	3	9
Computer Related	17	28	13	13
Other Electronics	19	19	6	22
Genetic Engineering	0	4	10	0
Medical/Health Related	7	9	3	3
Energy Related	0	0	0	0
Consumer Related	20	23	23	34
Industrial Products	17	12	13	3
Industrial Automation	1	2	6	0
All Other	11	2	23	16
	---	---	---	---
TOTAL	100	100	100	100
TOTAL AMOUNT INVESTED (\$ MILLIONS)	70	57	31	32

TABLE A18

AVERAGE AMOUNT INVESTED  
IN ONTARIO COMPANIES BY INDUSTRY  
(\$ MILLIONS)

INDUSTRY	1986	1985	1984	1983
Communications	1.00	0.50	0.25	0.60
Computer Related	0.80	1.23	0.67	0.67
Other Electronics	4.33	1.83	0.67	2.33
Genetic Engineering	0.00	0.50	1.50	-
Medical/Health Related	1.67	0.63	1.00	1.00
Energy Related	-	-	-	-
Consumer Related	1.40	1.44	1.40	2.75
Industrial Products	2.00	0.64	1.33	0.20
Industrial Automation	0.25	0.25	2.00	-
All Other	0.73	0.08	0.88	0.71
TOTAL	1.21	0.81	0.94	1.03



TABLE A19

NUMBER OF CANADIAN COMPANIES FINANCED  
BY GROUPS WITH PENSION INVESTORS  
(%)

INDUSTRY	1986	1985	1984	1983
Communications	8	9	4	8
Computer Related	21	19	19	24
Other Electronics	7	11	4	13
Genetic Engineering	4	3	4	0
Medical/Health Related	3	3	0	3
Energy Related	8	11	7	5
Consumer Related	13	9	26	21
Industrial Products	17	9	7	11
Industrial Automation	1	6	4	0
All Other	17	19	26	16
TOTAL	100	100	100	100
NUMBER OF COMPANIES FINANCED	71	64	27	38

TABLE A21

AVERAGE AMOUNT INVESTED IN CANADIAN COMPANIES  
BY GROUPS WITH PENSION INVESTORS  
(\$ MILLIONS)

INDUSTRY	1986	1985	1984	1983
Communications	1.50	1.33	0.00	0.33
Computer Related	0.73	1.00	0.40	0.56
Other Electronics	3.20	1.29	1.00	1.00
Genetic Engineering	4.00	0.00	0.00	
Medical/Health Related	4.50	4.00		1.00
Energy Related	-	-	-	-
Consumer Related	1.67	1.50	1.43	4.25
Industrial Products	1.92	1.00	2.50	1.25
Industrial Automation	0.00	0.25	1.00	
All Other	2.33	1.67	0.86	1.50
TOTAL	1.77	1.34	1.56	1.61

TABLE A22

NUMBER OF ONTARIO COMPANIES FINANCED  
BY GROUPS WITH PENSION INVESTORS  
(%)

INDUSTRY	1986	1985	1984	1983
Communications	3	4	6	10
Computer Related	26	29	19	25
Other Electronics	11	14	0	15
Genetic Engineering	3	4	6	0
Medical/Health Related	3	7	0	5
Energy Related	0	0	0	0
Consumer Related	18	11	44	10
Industrial Products	21	7	0	15
Industrial Automation	0	7	6	0
All Other	16	18	19	20
TOTAL	100	100	100	100
NUMBER OF COMPANIES FINANCED	38	28	16	20

TABLE A23

DISTRIBUTION OF AMOUNT INVESTED IN ONTARIO  
COMPANIES BY GROUPS WITH PENSION INVESTORS  
(%)

INDUSTRY	1986	1985	1984	1983
Communications	0	0	0	5
Computer Related	11	23	7	14
Other Electronics	25	13	0	18
Genetic Engineering	0	0	0	0
Medical/Health Related	5	15	0	5
Energy Related	0	0	0	0
Consumer Related	17	17	67	5
Industrial Products	33	8	0	18
Industrial Automation	0	2	7	0
All Other	9	23	20	36
	...	...	...	...
TOTAL	100	100	100	100
TOTAL AMOUNT INVESTED (\$ MILLIONS)	64	48	15	22



TABLE A24

AVERAGE AMOUNT INVESTED IN ONTARIO COMPANIES BY GROUPS WITH PENSION INVESTORS (\$ MILLIONS)					
INDUSTRY	1986	1985	1984	1983	
Communications	0.00	0.00	0.00	0.50	
Computer Related	0.70	1.38	0.33	0.60	
Other Electronics	4.00	1.50		1.33	
Genetic Engineering	0.00	0.00	0.00		
Medical/Health Related	3.00	3.50		1.00	
Energy Related					
Consumer Related	1.57	2.67	1.43	0.50	
Industrial Products	2.63	2.00		1.33	
Industrial Automation		0.50	1.00		
All Other	1.00	2.20	1.00	2.00	
TOTAL	1.68	1.71	0.94	1.10	





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